



Service Manual

Service Manual

KM555



Model : KM555



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1. Introduction

1.1.Purpose

This manual provides the information necessary to repair, calibration, description and download the features of the KM555.

1.2.Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system.

There might be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. LGE does not warrant that this product is immune from the above case but will prevent unauthorized use of common carrier telecommunication service of facilities accessed through or connected to it. LGE will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the KM555 or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

1. Introduction

D. Maintenance Limitations

Maintenance limitations on the KM555 must be performed only by the LGE or its authorized agent. The user may not make any changes and/or repairs except as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

F. Pictures


The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

KM555 may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated by the  sign. Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

1.3 Abbreviation

For the purposes of this manual, following abbreviations apply:

◆ APC	Automatic Power Control
◆ BB	Baseband
◆ BER	Bit Error Ratio
◆ CC-CV	Constant Current – Constant Voltage
◆ CLA	Cigar Lighter Adapter
◆ DAC	Digital to Analog Converter
◆ DCS	Digital Communication System
◆ dBm	dB relative to 1 milli-watt
◆ DSP	Digital Signal Processing
◆ EEPROM	Electrical Erasable Programmable Read-Only Memory
◆ EGPRS	Enhanced General Packet Radio Service
◆ EL	Electroluminescence
◆ ESD	Electrostatic Discharge
◆ FPCB	Flexible Printed Circuit Board
◆ GMSK	Gaussian Minimum Shift Keying
◆ GPIB	General Purpose Interface Bus
◆ GPRS	General Packet Radio Service
◆ GSM	Global System for Mobile Communications
◆ IPUI	International Portable User Identity
◆ IF	Intermediate Frequency
◆ LCD	Liquid Crystal Display
◆ LDO	Low Drop Output
◆ LED	Light Emitting Diode
◆ LGE	LG Electronics
◆ OPLL	Offset Phase Locked Loop
◆ PAM	Power Amplifier Module
◆ PCB	Printed Circuit Board
◆ PGA	Programmable Gain Amplifier
◆ PLL	Phase Locked Loop
◆ PSTN	Public Switched Telephone Network
◆ RF	Radio Frequency

1. Introduction

◆ RLR	Receiving Loudness Rating
◆ RMS	Root Mean Square
◆ RTC	Real Time Clock
◆ SAW	Surface Acoustic Wave
◆ SIM	Subscriber Identity Module
◆ SLR	Sending Loudness Rating
◆ SRAM	Static Random Access Memory
◆ STMR	Side Tone Masking Rating
◆ TA	Travel Adapter
◆ TDD	Time Division Duplex
◆ TDMA	Time Division Multiple Access
◆ UART	Universal Asynchronous Receiver/Transmitter
◆ VCO	Voltage Controlled Oscillator
◆ VCTCXO	Voltage Control Temperature Compensated Crystal Oscillator
◆ WAP	Wireless Application Protocol
◆ 8PSK	8 Phase Shift Keying

2. Performance

2.1. Supporting Standard

Item	Feature	Comment
Supporting Standard	WCDMA 900 / WCDMA 2100/HSDPA GSM850/EGSM/DCS/PCS1 with seamless handover Phase 2+(include AMR) SIM Toolkit : Class 3	
Frequency Range	GSM850 TX : 824 - 849MHz GSM850 RX : 869 - 894MHz EGSM TX : 880 - 915 MHz EGSM RX : 925 - 960 MHz DCS TX : 1710 - 1785 MHz DCS RX : 1805 - 1880 MHz PCS TX : 1850 - 1910 MHz PCS RX : 1930 - 1990 MHz WCDMA900 TX : 880 - 915 MHz WCDMA900 RX : 925 - 960 MHz WCDMA2100 TX : 1920 - 1980 MHz WCDMA2100 RX : 2110 - 2170 MHz HSDPA TX : 880 - 915 MHz 1920 - 1980 MHz HSDPA RX : 925 - 960 MHz 2110 - 2170 MHz WLAN 802.11g : 2400 – 2483.5 MHz	
Application Standard	WAP 2.0, JAVA 2.1	

2.2. Main Parts : Solution

Item	Part name	Comment
Digital Baseband	PMB8878 (Infineon)	
Analog Baseband	PMB8878 (Infineon)	
RF chip	TQ7M5005H (TriQuent))	

2. Performance

2.3. H/W features

Item	Feature	Comment
Form Factor	Color LCD – Bar Type	
Battery	1)Capacity Standard : Li-Ion, 950mAh	
	2) Packaging Type : Soft Pack	

Item		Feature	Comment
Size		105.9 × 53.4 × 11.95mm	
Weight		105g	With Battery
Stand-by time	GSM	227 hours	@paging period 5
	WCDMA	227hours	@DRX=7
Talk time	GSM	170min	@ Power Level 5
	WCDMA	170min	@Tx=12dBm
Charging time		2hours 20min	@power OFF/1000mAh
Rx sensitivity		EGSM900 : -105 dBm DCS1800 : -105 dBm PCS1900 : -105 dBm WCDMA2100 : -106.7 dBm	
TX output power	GSM/ GPRS	EGSM900 : 32 dBm DCS1800 : 30 dBm PCS1900 : 29.5 dBm	Class4 (EGSM900) Class1(DCS) Class1(PCS)
	EDGE	EGSM900 : 27 dBm DCS1800 : 26 dBm PCS1900 : 26 dBm	E2 (EGSM900) E2 (DCS) E2 (PCS)
GPRS compatibility		GPRS Class 12	
EDGE compatibility		EDGE Class 12	
Display		Main LCD(3", 480 x 800)/TFT	
Built-in Camera		3 Mega pixel	
ANT		Main : Internal Fixed Type	

2. Performance

System connector	5 Pin	
Ear Phone Jack	Φ3.5 4 Pole, Stereo	
PC synchronization	Yes	
Speech coding	FR, EFR, HR, AMR	
Vibrator	Built in Vibrator	
Bluetooth	V2.1 with A2DP	
Voice Recording	Yes	
Speaker Phone mode Support	Yes	
Travel Adapter	Yes	
CDROM	No	
Stereo Headset	Yes	
Data Cable	No	
T-Flash	Yes	Not Equipped

2. Performance

2.4. HW Spec.

2.4.1 GSM Transmitter/Receiver spec.

Item	Specification
Frequency	GSM 850 TX : 824 - 849 MHz RX : 869 - 894 MHz EGSM TX : 880 - 915 MHz RX : 925 - 960 MHz DCS TX : 1710 - 1785 MHz RX : 1805 - 1880 MHz PCS TX : 1850 - 1910 MHz RX : 1930 - 1990 MHz
Phase Error	Rms : 5° Peak : 20 °
Frequency Error	GSM : 0.1 ppm DCS/PCS : 0.1 ppm
EMC(Radiated Spurious Emission Disturbance)	GSM/DCS : < -28dBm
Transmitter Output power and Burst Timing	GSM : 5dBm – 33dBm ± 3dB DCS/PCS : 0dBm – 30dBm ± 3dB
Burst Timing	<3.69us
Spectrum due to modulation out to less than 1800kHz offset	200kHz : -36dBm 600kHz : -51dBm/-56dBm
Spectrum due to modulation out to larger than 1800kHz offset to the edge of the transmit band	GSM : 1800-3000kHz : < -63dBc(-46dBm) 3000kHz-6000kHz : < -65dBc(-46dBm) 6000kHz < : < -71dBc(-46dBm) DCS : 1800-3000kHz : < -65dBc(-51dBm) 6000kHz < : < -73dBc(-51dBm)
Spectrum due to switching transient	400kHz : -19dBm/-22dBm(5/0), -23dBm 600kHz : -21dBm/-24dBm(5/0), -26dBm
Reference Sensitivity – TCH/FS	Class II(RBER) : -105dBm(2.439%)
Usable receiver input level range	0.012(-15 - -40dBm)
Intermodulation rejection – Speech channels	± 800kHz, ± 1600kHz : -98dBm/-96dBm (2.439%)
AM Suppression – GSM : -31dBm - DCS : -29dBm	-98dBm/-96dBm (2.439%)
Timing Advance	± 0.5T

2.4.2 WCDMA Transmitter spec.

Item	Specification
Transmit Frequency	WCDMA900 : 880 – 915MHz WCDMA2100 : 1920 MHz ~ 1980 MHz
Maximum Output Power	+24 dBm / 3.84 MHz, +1 / -3 dB
Frequency Error	within ± 0.1 PPM
Open Loop Power Control	Normal Conditions : within ± 9 dB, Extreme Conditions : within ± 12 dB
Minimum Transmit Power	< -50 dBm / 3.84 MHz
Occupied Bandwidth	< 5 MHz at 3.84 Mcps (99% of power)
Adjacent Channel Leakage Power Ratio (ACLR)	> 33 dB @ ± 5 MHz, > 43 dB @ ± 10 MHz
Spurious Emissions $ f-f_c > 12.5$ MHz	< -36 dBm / 1 kHz RW @ $9 \text{ kHz} \leq f < 150 \text{ kHz}$ < -36 dBm / 10 kHz RW @ $150 \text{ kHz} \leq f < 30 \text{ MHz}$ < -36 dBm / 100 kHz RW @ $30 \text{ MHz} \leq f < 1 \text{ GHz}$ < -30 dBm / 1 MHz RW @ $1 \text{ GHz} \leq f < 12.75 \text{ GHz}$ < -41 dBm / 300 kHz RW @ $1893.5 \text{ MHz} < f < 1919.6 \text{ MHz}$ < -67 dBm / 100 kHz RW @ $925 \text{ MHz} \leq f \leq 935 \text{ MHz}$ < -79 dBm / 100 kHz RW @ $935 \text{ MHz} < f \leq 960 \text{ GHz}$ < -71 dBm / 100 kHz RW @ $1805 \text{ MHz} \leq f \leq 1880 \text{ MHz}$
Transmit Intermodulation	< -31 dBc @ 5 MHz & < -41 dBc @ 10 MHz when Interference CW Signal Level = -40 dBc
Error Vector Magnitude	< 17.5 %, when Pout \geq -20 dBm
Peak Code Domain Error	< -15 dB at Pout \geq -20 dBm

2. PERFORMANCE

2.4.3 WCDMA Receiver spec.

Item	Specification																			
Receive Frequency	WCDMA900 : 925 MHz ~ 960 MHz WCDMA2100 : 2110 ~2170 MHz																			
Reference Sensitivity Level	BER < 0.001 when \hat{I}_{or} = -106.7 dBm / 3.84 MHz																			
Maximum Input Level	BER < 0.001 when \hat{I}_{or} = -25 dBm / 3.84 MHz																			
Adjacent Channel Selectivity (ACS)	ACS > 33 dB where BER < 0.001 when \hat{I}_{or} = -92.7 dBm / 3.84 MHz & I_{oac} = -52 dBm / 3.84 MHz @ ± 5 MHz																			
Blocking Characteristic	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & $I_{blocking}$ = -56 dBm / 3.84 MHz @ $F_{uw}(\text{offset}) = \pm 10$ MHz or $I_{blocking}$ = -44 dBm / 3.84 MHz @ $F_{uw}(\text{offset}) = \pm 15$ MHz																			
Spurious Response	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & $I_{blocking}$ = -44 dBm																			
Intermodulation	BER < 0.001 when \hat{I}_{or} = -103.7 dBm / 3.84 MHz & I_{ouw1} = -46 dBm @ $F_{uw1}(\text{offset}) = \pm 10$ MHz & I_{ouw2} = -46 dBm / 3.84 MHz @ $F_{uw2}(\text{offset}) = \pm 20$ MHz																			
Spurious Emissions	< -57 dBm / 100 kHz BW @ $9 \text{ kHz} \leq f < 1 \text{ GHz}$ < -47 dBm / 1 MHz BW @ $1 \text{ GHz} \leq f \leq 12.75 \text{ GHz}$																			
Inner Loop Power Control In Uplink	Adjust output(TPC command) <table><tr><td>cmd</td><td>1dB</td><td>2dB</td><td>3dB</td></tr><tr><td>+1</td><td>+0.5/1.5</td><td>+1/3</td><td>+1.5/4</td></tr><tr><td>0</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td><td>-0.5/+0.5</td></tr><tr><td>-1</td><td>-0.5/-1.5</td><td>-1/-3</td><td>-1.5/-4</td></tr></table> group(10equal command group) <table><tr><td>+1</td><td>+8/+12</td><td>+16/+24</td></tr></table>	cmd	1dB	2dB	3dB	+1	+0.5/1.5	+1/3	+1.5/4	0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5	-1	-0.5/-1.5	-1/-3	-1.5/-4	+1	+8/+12	+16/+24
cmd	1dB	2dB	3dB																	
+1	+0.5/1.5	+1/3	+1.5/4																	
0	-0.5/+0.5	-0.5/+0.5	-0.5/+0.5																	
-1	-0.5/-1.5	-1/-3	-1.5/-4																	
+1	+8/+12	+16/+24																		

2.4.4 HSDPA Transmitter Spec..

Item	Specification																										
Transmit Frequency	880 MHz ~ 915 MHz 1920MHz ~ 1980 MHz																										
Maximum Output Power	Sub-Test 1=1/15, 2=12/15 21~25dBm / 3.84 MHz 3=13/15 4=15/8 20~25dBm / 3.84 MHz 5=15/7 6=15/0 19~25dBm / 3.84 MHz																										
HS-DPCCH	<table><tr><th>Sub-test in table C.10.1.</th><th>Power step</th><th>Power step slot boundary</th><th>Power step size, P [dB]</th><th>Transmitter power step tolerance [dB]</th></tr><tr><td rowspan="4">5</td><td>1</td><td>Start of Ack/Nack</td><td>6</td><td>+/- 2.3</td></tr><tr><td>2</td><td>Start of CQI</td><td>1</td><td>+/- 0.6</td></tr><tr><td>3</td><td>Middle of CQI</td><td>0</td><td>+/- 0.6</td></tr><tr><td>4</td><td>End of CQI</td><td>5</td><td>+/- 2.3</td></tr></table>					Sub-test in table C.10.1.	Power step	Power step slot boundary	Power step size, P [dB]	Transmitter power step tolerance [dB]	5	1	Start of Ack/Nack	6	+/- 2.3	2	Start of CQI	1	+/- 0.6	3	Middle of CQI	0	+/- 0.6	4	End of CQI	5	+/- 2.3
Sub-test in table C.10.1.	Power step	Power step slot boundary	Power step size, P [dB]	Transmitter power step tolerance [dB]																							
5	1	Start of Ack/Nack	6	+/- 2.3																							
	2	Start of CQI	1	+/- 0.6																							
	3	Middle of CQI	0	+/- 0.6																							
	4	End of CQI	5	+/- 2.3																							
Spectrum Emission Mask	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 <table><tr><th>Frequency offset from carrier Δf</th><th>Minimum requirement</th><th>Measurement Bandwidth</th></tr><tr><td>2.5 ~ 3.5 MHz</td><td>-35-15\times(Δf-2.5)dBc</td><td>30 kHz</td></tr><tr><td>3.5 ~ 7.5 MHz</td><td>-35-1\times(Δf-3.5)dBc</td><td>1 MHz</td></tr><tr><td>7.5 ~ 8.5 MHz</td><td>-35-10\times(Δf-7.5)dBc</td><td>1 MHz</td></tr><tr><td>8.5 ~ 12.5 MHz</td><td>-49dBc</td><td>1 MHz</td></tr></table>					Frequency offset from carrier Δf	Minimum requirement	Measurement Bandwidth	2.5 ~ 3.5 MHz	-35-15 \times (Δf -2.5)dBc	30 kHz	3.5 ~ 7.5 MHz	-35-1 \times (Δf -3.5)dBc	1 MHz	7.5 ~ 8.5 MHz	-35-10 \times (Δf -7.5)dBc	1 MHz	8.5 ~ 12.5 MHz	-49dBc	1 MHz							
Frequency offset from carrier Δf	Minimum requirement	Measurement Bandwidth																									
2.5 ~ 3.5 MHz	-35-15 \times (Δf -2.5)dBc	30 kHz																									
3.5 ~ 7.5 MHz	-35-1 \times (Δf -3.5)dBc	1 MHz																									
7.5 ~ 8.5 MHz	-35-10 \times (Δf -7.5)dBc	1 MHz																									
8.5 ~ 12.5 MHz	-49dBc	1 MHz																									
Adjacent Channel Leakage Power Ratio (ACLR)	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 > 33 dB @ ± 5 MHz > 43 dB @ ± 10 MHz																										
Error Vector Magnitude	3GPP Not Complete																										

2. PERFORMANCE

2.4.5 HSDPA Receiver Spec..

Item	Specification
Receive Frequency	925 MHz ~ 960 MHz 2110 MHz ~2170 MHz
Maximum Input Level (BLER or R), 16QAM Only	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 BLER < 10% or R >= 700kbps

2.4.6 WLAN 802.11g Transmitter and Receiver Spec.

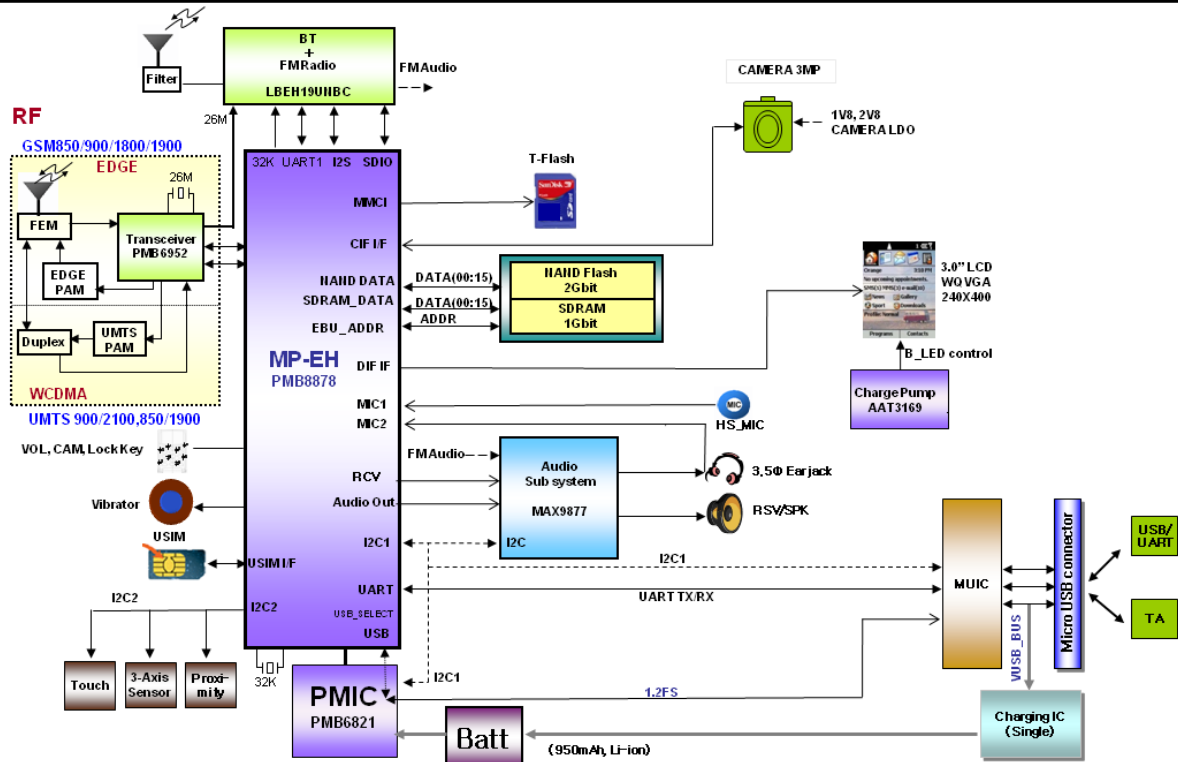
Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	$\leq 20\text{dBm}$ under (Europe), $\leq 30\text{dBm}$ under (USA)
Frequency Tolerance	within ± 25 PPM
Chip clock Frequency Tolerance	within ± 25 PPM
Spectrum Mask	≤ -20 @ $\pm 11\text{MHz}$ offset (9MHz ~ 11MHz) ≤ -28 @ $\pm 20\text{MHz}$ offset (11MHz ~ 20MHz) ≤ -40 @ $\pm 30\text{MHz}$ offset (20MHz ~ 30MHz)
Transmitter constellation error (rms EVM)	$\leq -5\text{dB}$
Spurious Emissions	$< -36\text{ dBm}$ @ 30MHz ~ 1GHz $< -30\text{ dBm}$ above @ 1GHz ~ 12.75GHz $< -47\text{ dBm}$ @ 1.8GHz ~ 1.9GHz $< -47\text{ dBm}$ @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	PER $\leq 10\%$ $-82\text{dBm}@6\text{Mbps}$, $-81\text{dBm}@9\text{Mbps}$, $-79\text{dBm}@12\text{Mbps}$ $-77\text{dBm}@18\text{Mbps}$, $-74\text{dBm}@24\text{Mbps}$, $-70\text{dBm}@36\text{Mbps}$ $-66\text{dBm}@48\text{Mbps}$, $-65\text{dBm}@54\text{Mbps}$
Rx Max input Sensitivity	$\geq -20\text{dBm}(6,9,12,18,24,36,48,54\text{Mbps})$ @ PER $\leq 10\%$
Rx Adjacent Channel Rejection	PER $\leq 10\%$, ACR $\geq 16\text{dB}@6\text{Mbps}$, ACR $\geq 15\text{dB}@9\text{Mbps}$, ACR $\geq 13\text{dB}@12\text{Mbps}$, ACR $\geq 11\text{dB}@18\text{Mbps}$, ACR $\geq 8\text{dB}@24\text{Mbps}$, ACR $\geq 4\text{dB}@36\text{Mbps}$ ACR $\geq 0\text{dB}@48\text{Mbps}$, ACR $\geq -1\text{dB}@54\text{Mbps}$ ※ACR shall be measured by setting the desired signal's strength 3 dB above the rate-dependent sensitivity specified in min input sensitivity

3. BB Circuit Technical brief

3. BB Circuit Technical brief

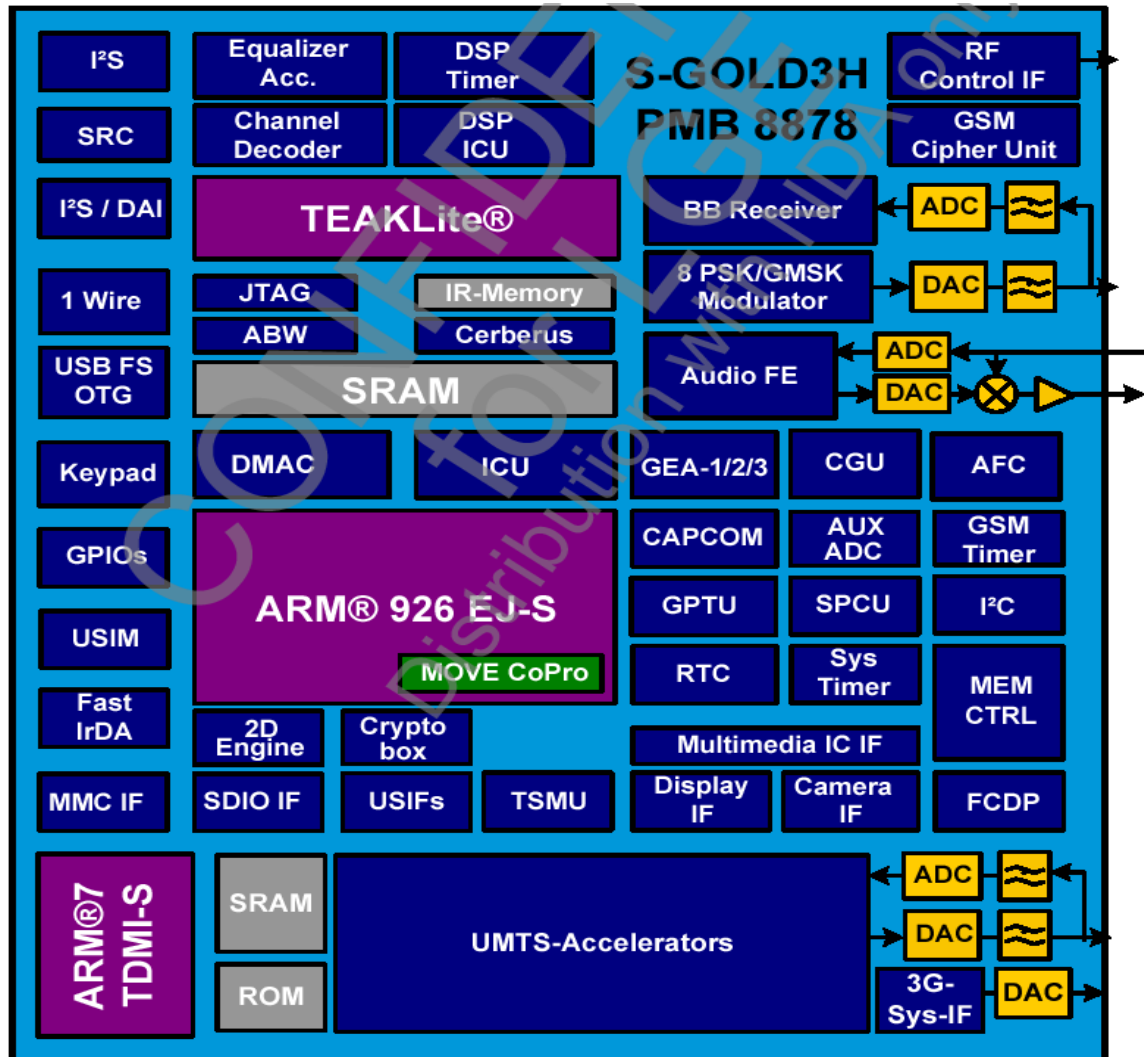
3.1 Functional Block Diagram

KM555 Rev.1.0 Block Diagram



[Figure 3.1] Functional Block Diagram

3.2 Baseband Processor Introduction



[Figure 3.2] Top level block diagram of S-GOLD3H(PMB8878)

3. BB Circuit Technical brief

3.2.1 General description

S-GOLD®3H is a HSDPA/WCDMA/EDGE/GPRS/GSM system in package solution consisting of a mixed signal baseband IC combined with a 3G coprocessor IC, providing all analog and digital functionality for a dual mode mobile phone in a single chip.

Both ICs building up the **S-GOLD®3H** SiP are manufactured in infineon Technologies` 1.35V 90nm CMOS technology to meet the ever increasing demands of the market for feature rich and high performance terminals at low costs.

The chip will support the FR, EFR, HR and AMR-NB vocoding.

S-GOLD®3H support multi-slot operation modes HSCSD (up to class 10), GPRS for high speed data application (up to class 12), EGPRS (up to class 12) and DTM(class11) without additional external hardware.

3.2.2. Block Description

- **Processing core**

- ARM926EJ-S 32 bit processor core for controller functions. The ARM926EJ-S includes an MMU, and the Jazelle Java extension for Java acceleration and a MOVE co-processor to accelerate Motion Estimation algorithms with based video encoding schemes..
- TEAKLite DSP core

- **ARM9-Memory**

- 32k Byte Boot ROM on the AHB
- 128k Byte SRAM on the AHB, flexibly usable as program or data RAM
- 32k Byte Instruction Cache
- 32k Byte Data Cache
- 8k Byte Instruction Tightly coupled Memory (I-TCM)
- 8k Byte Data tightly coupled memory (D-TCM)

- **TEAKLite®-Memory**

- 120k x 16bit Program ROM
- 8k x 16bit Program RAM
- 72k x 16bit Data ROM
- 48k x 16bit Data XRAM
- 5k x 16bit Data YRAM
- Incremental Redundancy(IR) Memory of 35904 words of 16bit

- **Shared Memory Block**

1.5K x 32bit Shared RAM(dual ported) between controller system and TEAKLite®.

- **Controller Bus system**

The processor cores and their peripherals are connected by powerful buses.

- Multi-layer AHB for connecting the ARM and the other master capable building blocks with the internal and external memories and with the peripheral buses.
- An FPI-Bus for connecting GSM peripherals, called hereafter FPI3 bus.
- A controller FPI bus for connecting the low performance controller peripherals such as keypad etc. called hereafter fPI2 bus.
- FPI2 and FPI3 are connected asynchronously to the AHB buses. 1 DMA controller with 8channels offloads the controller from data transfers.
- 2 AHB Lite buses for connecting multi-media and high performance peripherals, called AHB_PER1 and AHB_PER2 hereafter. These peripheral buses are connected to the multi-layer AHB 'backbone' by asynchronous, burst capable AHB2AHB bridges which are shared between accessing masters.
- The DMA controller is enabled to access AHB_PER1 by use of its first master interface and AHB_PER2 by its second master interface.

- **TEAKLite® Bus System**

- 1 TEAKLite® data bus for connecting the TEAKLite® data memory and the TEAKLite® peripherals. Also the data bus is connected into the controller system via shared RAMs to the FPI3 bus.
- 1 TEAKLite® program bus for connecting the TEAKLite® program memory to the TEAKLite®.

- **Clock system**

The clock system allows widely independent selection of frequencies for the essential parts of the S-GOLD®3H. Thus power consumption and performance can be optimized for each application.

- **Functional Hardware block**

- CPU and DSP Timers
- MOVE coprocessor performing motion estimation for video encoding algorithms (H.263, MPEG-4)
- Programmable PLL with four additional phase shifters for system clock generation
- GSM Timer Module that off-loads the CPU from radio channel timing
- GMSK / 8-PSK Modulator according to GSM-standard 05.04 (5/2000)
 - GMSK Modulator: gauss-filter with $B \cdot T = 0.3$
 - EDGE Modulator: 8PSK-modulation with linearized GMSK-Pulse-Filter

3. BB Circuit Technical brief

- Hardware accelerators for equalizer and channel decoding.
- Incremental Redundancy memory for EDGE class 12 support
- A5/1, A5/2, A5/3 Cipher unit
- GEA1, GEA2, GEA3 Cipher Unit to support GPRS data transmission
- f8 and f9 Cipher unit
- Advanced static and dynamic power management features including TDMA-Frame synchronous low-power mode and enhanced CPU modes(idle and sleep modes)
- 2D engine for support of image processing and 2D graphics applications. The 2D engine is tightly coupled to the display interface. The resulting building block consisting of 2D engine and Display interface is called Display Content Controller (DCC)
- Security crypto box supporting
 - AES, DES, 3 DES
 - Hash function
 - RSA acceleration
 - Secret Root Key (e-fuse) and Key Management
 - True Random Number Generator
- Sample Rate Converter (SRC) for audio up-sampling
- Comprehensive static and dynamic Power Management
 - Various frequency options during operation mode
 - 32 kHz clock in standby mode
 - Sleep control in standby mode
 - RAMs and ROMs in power save mode during standby mode
 - Additional leakage current reduction in standby mode possible by switching off for the TEAKLite® subsystem.
- Extensive debug support for the controller and the DSP system
 - OCDS level 2+ (run control, non-intrusive program flow trace and limited data flow trace) for ARM
 - OCDS level 1+ (run control, limited program flow trace) for the TEAKLite®
 - Multi-core debug support
 - 4 Monitor pins for important internal signals and most pad signals
 - Cerberus debugging unit
- 2 General Purpose Timers with 3 32-bit timers
- Serial number
- A real time clock with alarm functions
- 2 capture/compare units with 16 channels. One channel active during sleep mode.

● 3G Coprocessor Subsystem

- ARM7 TRMI-S
 - 240 kByte Instruction RAM
 - 64 kByte Data RAM
 - 8 kByte Boot ROM
- 20kByte Communication RAM
- HW accelerators for
 - Transmit Path
 - Inner and Outer Receiver for Release5 incl. HSDPA

3.2.3 RF Interface(T_OUT)

S-Gold® 3H uses this interface to control RF IC and Peripherals.

[Table 3.2.3-1] RF Interface Spec.

T_OUT		
Resource	Interconnection	Description
T_OUT0	TXON_PA	PAM Power on
T_OUT1	NA	-
T_OUT2	ANT_SEL1	
T_OUT3	HOOK_DETECT	
T_OUT4	_CHG_EOC	
T_OUT5	JACK_DETECT	
T_OUT6	PA_MODE	PAM Mode select
T_OUT7	ANT_SEL2	
T_OUT8	ANT_SEL3	
T_OUT9	KEY_BACK_EN	
T_OUT10	DSR	
T_IN0	LCD_BL_CTRL	
T_IN1	CHG_EN	

3. BB Circuit Technical brief

3.2.4 ADC channel

ADC block is composed of 11 external ADC channel. This block operates charging process and other related process by reading battery voltage and other analog values.

[Table 3.2.4-1] S-Gold3 ADC channel usage

ADC channel		
Resource	Interconnection	Description
M0	BAT_ID	Battery temperature measure
M1	RF_TEMP	RF block temperature measure
M2	NC	
M3	NC	
M4	NC	
M5	N.C	
M6	N.C	
M7	HW revision reserved pin	
M8	VBAT (divide resistor)	Battery supply voltage measure
M9	N.C	
M10	N.C	

3.2.5 GPIO map

Over a hundred allowable resources, KM555 is using as follows except dedicated to SIM and Memory. KM555 GPIO(General Purpose Input/Output) Map, describing application, I/O state, and enable level, is shown in below table

[Table 3.2.5-1] S-Gold®3H GPIO pin Map

Port Function	Net Name	Description
KEY MATRIX		
KP_IN0	KEYIN(0)	
KP_IN1	KEYIN(1)	
KP_IN2	KEYIN(2)	
KP_IN3	CAM_LDO_EN	
KP_IN4	WLAN_RESET_N	
KP_IN5	PROX_INT	
KP_IN6	TOUCH_LDO_EN	
KP_OUT0	KEYOUT0	
KP_OUT1	KEYOUT1	
KP_OUT2	IF_MODE[0]	
KP_OUT3	IF_MODE[1]	
USIF1		
USIF1_RXD_MRST	UART_RX	UART Data
USIF1_TXD_MTSR	UART_TX	UART Data
USIF1_RTS_N	USB_DAT_VP	USB Data
USIF1_CTS_N	USB_SE0_VM	USB Data
USIF2		
USIF2_RXD_MRST	NA(NOT available)	
USIF2_TXD_MTSR	RPWRON	
USIF2_RTS_N	UART_BT_RTS	Bluetooth RTS
USIF2_CTS_N	UART_BT_CTS	Bluetooth CTS

3. BB Circuit Technical brief

USIF3		
USIF3_RXD_MRST	UART_BT_RX	
USIF3_TXD_MTSR	UART_BT_TX	
USIF3_SCLK	LIN_MOTOR_EN	
CLK		
CLK32K	CLK32k	For FM Radio, BT CLK32K
CAMERA I/F		
CIF_D0	CAM_D0	
CIF_D1	CAM_D1	
CIF_D2	CAM_D2	
CIF_D3	CAM_D3	
CIF_D4	CAM_D4	
CIF_D5	CAM_D5	
CIF_D6	CAM_D6	
CIF_D7	CAM_D7	
CIF_PCLK	CIF_PCLK	
CIF_HSYNC	CIF_HSYNC	
CIF_VSYNC	CIF_VSYNC	
CLKOUT2	CIF_MCLK	
CIF_PD	CAM_PD	
CIF_RESET	CAM_RESET	
LCD I/F		Display interface
DIF_D0	LCD_DATA[0]	
DIF_D1	LCD_DATA[1]	
DIF_D2	LCD_DATA[2]	
DIF_D3	LCD_DATA[3]	
DIF_D4	LCD_DATA[4]	
DIF_D5	LCD_DATA[5]	
DIF_D6	LCD_DATA[6]	
DIF_D7	LCD_DATA[7]	
DIF_D8	LCD_ID	
DIF_DS1	LCD_CS_N	
DIF_DS2	MMC_DETECT	
DIF_CD	LCD_ADS	
DIF_WR	LCD_WR_N	
DIF_RD	LCD_RD_N(NA)	
DIF_HD	BT_DBB_INT	
DIF_VD	LCD_VSYNC	

3. BB Circuit Technical brief

DIF_RESET1	LCD_RESET	
DIF_RESET2	A_RESET	
I2C		
I2C1_SCL	I2C1_SCL	
I2C1_SDA	I2C1_SDA	
PM_INT (EINT)	PM_INT	
I2C2_SCL	I2C2_SCL	
I2C2_SDA	I2C2_SDA	
I2S1		
I2S1_CLK0	BT_PCM_CLK	
I2S1_CLK1	NA	
I2S1_RX	BT_PCM_RX	
I2S1_TX	BT_PCM_TX	
I2S1_WA0	BT_PCM_SYNC	
I2S2		
I2S2_CLK0	BT_RESET_N	
I2S2_CLK1	I2S2_CLK	
I2S2_RX	I2SE_RX	
I2S2_TX	DBB_BT_INT	
I2S2_WA0	TOUCH_INT	
I2S2_WA1	I2S2_SYNC	
External Memory		
MMCI1_CMD	WLAN_CMD	
MMCI1_DAT[0]	WLAN_SDIO[0]	
MMCI1_CLK	WLAN_CLK	
MMCI1_DAT[1]	WLAN_SDIO[1]	
MMCI1_DAT[2]	WLAN_SDIO[2]	
MMCI1_DAT[3]	WLAN_SDIO[3]	
MMCI2_CMD	MMC_CMD	
MMCI2_DAT[0]	MMC_D[0]	
MMCI2_CLK	MMC_CLK	
IrDA		
IRDA_TX	USB_OEN	For USB
IRDA_RX	MUIC_INT	
I2S1		
I2S1_CLK0	BT_PCM_CLK	For Bluetooth
I2S1_CLK1	NA	

3. BB Circuit Technical brief

I2S1_RX	BT_PCM_RX	For Bluetooth
I2S1_TX	BT_PCM_TX	For Bluetooth
I2S1_WA0	BT_PCM_SYNC	For Bluetooth
Audio I/F		
EPN1	REC_N	For Receiver
EPP1	REC_P	For Receiver
EPPA1	BB_SND_L	For Headset
EPREF	NA	Reference
EPPA2	BB_SND_R	For Headset
MICN1	MAIN_MIC_N	For Main Mic
MICP1	MAIN_MIC_P	For Main Mic
MICN2	HS_MIC_N	For Headset Mic
MICP2	HS_MIC_P	For Headset Mic
VMICP	VMIC_P	Power for MIC
VMICN	GND	Ground for MIC
ADC		
M0	BAT_ID	Battery temperature measure
M1	RF_TEMP	RF block temperature measure
M7	HW revision reserved pin	
M8	VBAT (divide resistor)	
M2 ,M3,M4,M5, M6, M9,M10	NA	
Reference		
VREFP	VREFN	
IREF	GND with resistor	22K(1%)
JTAG I/F		
JTAG0_TDO	TDO	
JTAG0_TDI	TDI	
JTAG0_TMS	TMS	
JTAG0_TCK	TCK	
JTAG0_TRST_N	TRSTN	
JTAG0_RTCK	RTCK	
JTAG1_TDO	A_TDO	
JTAG1_TDI	A_TDI	
JTAG1_TMS	A_TMS	
JTAG1_RTCK	A_RTCK	
RST_N	A_RESTET	
ETM I/F		
TRIG_IN	TRIG_IN	

3. BB Circuit Technical brief

MON1	2V62_VIO	ETM
MON2	GND	ETM
TRACESYNC	TRACESYNC	
TRACECLK	TRACECLK	
PIPESTAT2	PIPESTAT2	
PIPESTAT1	PIPESTAT1	
PIPESTAT0	PIPESTAT0	
TRACEPKT0	TRACEPKT0	
TRACEPKT1	TRACEPKT1	
TRACEPKT2	TRACEPKT2	
TRACEPKT3	TRACEPKT3	
TRACEPKT4	TRACEPKT4	
TRACEPKT5	TRACEPKT5	
TRACEPKT6	TRACEPKT6	
TRACEPKT7	TRACEPKT7	
Memory		
MEM_AD[0]	DATA(0)	
MEM_AD[1]	DATA(1)	
MEM_AD[2]	DATA(2)	
MEM_AD[3]	DATA(3)	
MEM_AD[4]	DATA(4)	
MEM_AD[5]	DATA(5)	
MEM_AD[6]	DATA(6)	
MEM_AD[7]	DATA(7)	
MEM_AD[8]	DATA(8)	
MEM_AD[9]	DATA(9)	
MEM_AD[10]	DATA(10)	
MEM_AD[11]	DATA(11)	
MEM_AD[12]	DATA(12)	
MEM_AD[13]	DATA(13)	
MEM_AD[14]	DATA(14)	
MEM_AD[15]	DATA(15)	
MEM_WR_n	_WR	
MEM_RD_n	_RD	
MEM_BC0_n	_BC0	
MEM_BC1_n	_BC1	
MEM_BC2_n	LDQS	
MEM_BC3_n	UDQS	

3. BB Circuit Technical brief

MEM_A[0]	ADD(0)	
MEM_A[1]	ADD(1)	
MEM_A[2]	ADD(2)	
MEM_A[3]	ADD(3)	
MEM_A[4]	ADD(4)	
MEM_A[5]	ADD(5)	
MEM_A[6]	ADD(6)	
MEM_A[7]	ADD(7)	
MEM_A[8]	ADD(8)	
MEM_A[9]	ADD(9)	
MEM_A[10]	ADD(10)	
MEM_A[11]	ADD(11)	
MEM_A[12]	ADD(12)	
MEM_A[13]	ADD(13)	
MEM_A[14]	ADD(14)	
MEM_A[15]	ADD(15)	
MEM_A[16]	ADD(16)	
MEM_A[17]	ADD(17)	
MEM_A[18]	ADD(18)	
MEM_A[19]	ADD(19)	
MEM_A[20]	ADD(20)	
MEM_A[21]	ADD(21)	
MEM_A[22]	ADD(22)	
MEM_A[23]	ADD(23)	
MEM_A[24]	ADD(24)	
MEM_A[25]	ADD(25)	
MEM_A[26]	ADD(26)	
MEM_CSA0_N	ADD(27)	
MEM_CSA1_N	ADD(28)	
MEM_CSA2_N	ADD(29)	
MEM_CSA3_N	BA0	
MEM_CS0_n	_NAND_CS	INTEL NOR (64MB)
MEM_CS1_n	_RAM_CS	INTEL SDRAM (64MB)
MEM_CS2_n	NA	
MEM_CS3_n	_CS3	
MEM_ADV_n	BA1	
MEM_RAS_n	_RAS	
MEM_CAS_n	_CAS	

3. BB Circuit Technical brief

MEM_WAIT_n	_WAIT	
Memory		
FCDP_RBn	FCDP	
TDMA I/F		
T_OUT0	TXON_PA	PAM
T_OUT1	NA	
T_OUT2	ANT_SEL1	
T_OUT3	HOOK_DETECT	
T_OUT4	_CHG_EOC	Charging terminate signal
T_OUT5	JACK_DETECT	Jack detect
T_OUT6	PA_MODE	PAM
T_OUT7	ANT_SEL2	
T_OUT8	ANT_SEL3	
T_OUT9	KEY_BACK_EN	
T_OUT10	DSR	
T_IN0	LCD_BL_CTRL	
T_IN1	CHG_EN	Charging enable
RF I/F		
RF_STR0	2G_EN	
RF_STR1	_PPR	Charger detect
RF_DATA	2G_DATA	
RF_CLK	2G_CLK	
GPIO[7]	3G_LD	
GPIO[10]	3G_MASTER_ON	
GPIO[15]	3G_PA_MODE1	
GPIO[16]	ANT_SEL4	
GPIO[17]	ANT_SEL5	
GPIO[18]]	ANT_SEL6	
System Port		
AFC	AFC	
CLKOUT0 [<=26MHz]	CLK26M	Not used
F26M	26MHZ	26M Main Clock
F32K	32.768KHZ	to 32k crystal
OSC32K	32.768KHZ	to 32k crystal
RESET_n	_RESET	
TRIG_IN	TRIG_IN	
RTC_OUT	RTC_OUT	
SPCU_RC_OUT0	PM_VCXO_EN	

3. BB Circuit Technical brief

<i>DSP</i>		
DSPIN0	CLK32K	
DSPOUT1	WDOG	Navi key LED Backlight Control
DSPIN1	BT_WAKEUP	

3.3 Power management IC

3.3.1 General Description

SM-POWER is a highly integrated Power and Battery Management IC for mobile handsets. It has been specially designed for usage with S-Gold3. Although optimized for usage with the Infineon SGOLD

baseband device it is suitable for the S-GOLD lite and the E-GOLD+ baseband devices as well.

It also supports the cellular RF devices like SMARTi-DC, SMARTi-DC+, SMARTi-SD and the Bluemoon Single, Infineon's single chip solution for Bluetooth. If used with S-GOLD3 it provides all power supply functions (except for the RF PA) for a complete advanced GSM Edge smart phone minimizing external device count.

Block Description

- Highly efficient step-down converter for main digital baseband supply including Core, DSP and memory interface (External Bus Unit).
- Support of S-GOLD standby power-down concept
- Low-drop-out (LDO) regulators for Flash and mobile RAM memory devices
- Voltage independent switching of two SIM cards
- LDO regulators for baseband I/O supply
- LDO regulator for analog mixed-signal section of S-GOLD
- Low-noise LDO regulators for RF devices
- Supply for Bluemoon Single, Infineon's single chip solution for Bluetooth
- Audio amplifier 8 Ohms for handsfree operation and ringing
- Charge Control for charging Li-Ion/Polymer batteries under software control
- Pre-charge current generator with selectable current level
- RTC regulator with ultra-low quiescent current
- USB interface support for peripheral and mini-host mode
- Backlight LEDs driver with current selection and PWM dimming function
- Two single LED driver outputs for signaling
- Vibrator driver with adjustable voltage
- Fully controllable by software via I2C - Bus
- Temperature and battery voltage sensors
- Interrupt channels for peripherals

3. BB Circuit Technical brief

- System debug mode
- VQFN 48 package with heat sink and non-protruding leads
- Compatible with the Infineon E-GOLD+ V2 and V3

SM-POWER is a further step on the successful E-Power product line with enhanced and optimized functionality.

SM-POWER features a baseband supply concept with a DC/DC step-down converter cascaded by two linear regulators

- SM-POWER's DC/DC converter makes up to 40 % reduction of battery current for smart phone functions (e.g. organizer functions, games, MP3 decoding) possible.
- SDBB has high efficiency up to 95% and also a power save mode.
- Memory Interface is directly supported by the SDBB
- SDBB can also act as main supply voltage for E-GOLD+ or S-GOLDlite baseband devices.
- For S-GOLD two linear regulators for DSP and Core are cascaded after the SDBB.

SM-POWER supports the standby power-down concept of S-GOLD by temporarily switching off the linear regulator for the DSP during mobile standby whenever this subsystem is not used. In this phase the ARM controller and most peripherals including parts of the on-chip SRAM are kept powered-up with power being supplied by the other linear regulator.

SM-POWER includes a fully differential audio amplifier able to drive loads down to a nominal value of 8 Ohm for usage in hands-free phones and for ringing

- 450 mW maximum output power
- adjustable gain
- mute switch SM-POWER also integrates a charging function for Li-Ion, Li-Polymer batteries
- click and pop -protection SM-POWER also integrates a charging function for Li-Ion, Li-Polymer batteries
- Precharge current source with two current levels
- Constant current / constant voltage charging with 3 different termination voltages
- Programable charge current limitation for use with different batteries
- Freely programable pulse charging to reduce the thermal power dissipation in the constant voltage charging phase
- Top-off charge current sensing SM-POWER completes the USB interface of S-GOLD
- Regulated voltage for S-GOLD USB interface including reverse current and overvoltage protection
- Switch to supply USB pull-up resistor
- Mini-host pull down resistor functionality
- Charge pump with internal switching capacitor for USB host VBUS supply voltage SM-POWER fully supports LED and Vibra Motor functionality

- no external components needed
- driver for backlight LEDs adjustable in steps up to 140mA and with soft turn on and off by PWM dimming
- two driver outputs for single LEDs for precharge indication and signaling with i.e. change of colour
- driver for Vibra Motor with adjustable voltages, soft startup / shutdown and current limitation

SMPOWER

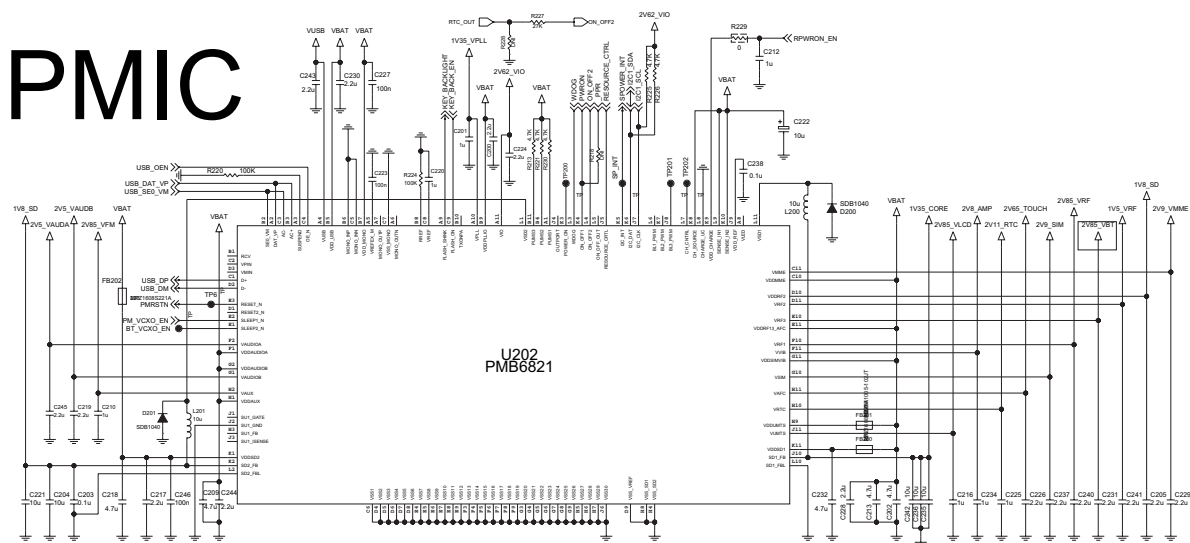
offers several control functions

- Power-on Reset Generator with logic state machine
- I2C bus interface
- I2C bus configurable mode control logic with ON (push-button or RTC), VCXOEN and LRF3EN (wake-up by Bluetooth) inputs
- Programable interrupt channels to handle peripherals like SIM, MMC and USB
- Monitoring of charging functions
- Undervoltage Shut-Down
- Errorflags (volatile or non-volatile) from many power-supply functions and thermal sensor in order to debug system
- Overtemperature Shut-Down
- Overtemperature Warning
- Support of S-GOLD standby power-down concept
- Support of S-GOLD Power-Down Pad Tristate Function

3. BB Circuit Technical brief

[Table 3.3.1-1] LDO Output Table of SM-Power3

LDO	Net name	Output Voltage	Output Current	Usage
SD1	1V35_Core	1.35V	600mA	Core & for LDO
SD2	1V8_SD	1.8V	300mA	Memory
VAUX	2V85_VFM	2.85V	100mA	FM RADIO
VIO	2V62_VIO	2.62V	100mA	Peripherals
VSIM	2V9_SIM	2.9V	70mA	SIM card
VMME	2V8_VMME	2.9V	150mA	u-SD
VUMTS	2V85_VLCD	2.85V	110mA	LCD
VAUDIOa	2V5_VAUDA	2.5V	200mA	Stereo headset, Mono earpiece
VAUDIOb	2V5_VAUDB	2.5V	50mA	Analog parts of S-Gold
VRF1	2V85_VRF	2.85V	150mA	2.85 V supply for SMARTi-PM RF transceiver
VRF2	1V5_VRF	1.53V	100mA	1.5 V supply for SMARTi-PM RF transceiver
VRF3	2V65_VBT	2.7V	150mA	Bluetooth
VPLL	1V35_VPLL	1.35V	30mA	S-GOLD3H PLL
VRTC	2V11_RTC	2.11V	4mA	Real Time Clock
VAFC	2V7_VRF	2.65V	5mA	Not used
VVIB	2V8_VAMP	2.8V	140mA	AUDIO AMP

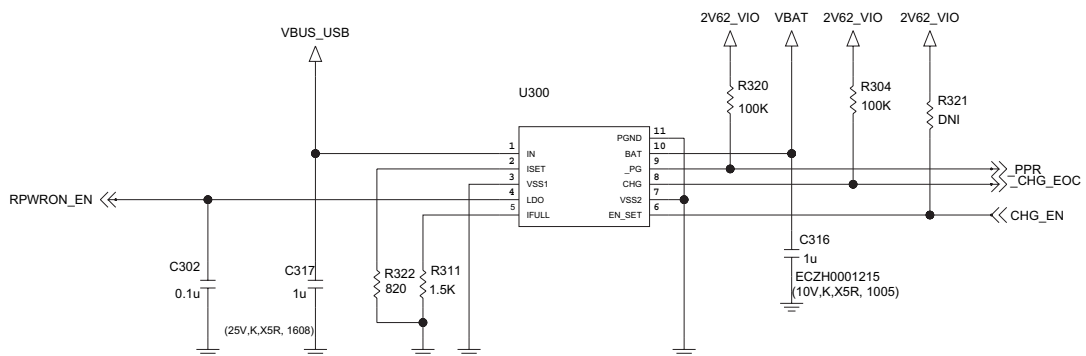


3.3.2 Charging control

- KM555 uses external charging IC which is BQ25040.

1. Charging method : CC-CV
2. Charger output voltage : 5.1 V
3. Charging time : 2h 20m
4. Charging current : 620 mA
5. CV voltage : 4.2 V
6. Cutoff current : 117 mA
7. Full charge indication current (icon stop current) : 117 mA
8. Recharge voltage : 4.15 V
9. Low battery alarm
 - a. Idle : 3.52 V ~ 3.33 V
 - b. Dedicated : 3.52 V ~ 3.3 V
10. Low battery alarm interval
 - a. Idle : 10 min
 - b. Dedicated : 10 min
11. Switch-off voltage : 3.35 V
12. Charging temperature adc range
 - a. ~ -20°C : low charging voltage operation (3.6 V ~ 3.9 V) .
 - b. -20°C ~ 60°C : standard charging (up to 4.2 V)
 - c. 60°C ~ : low charging voltage operation (3.6V ~ 3.9V)

CHARGING IC

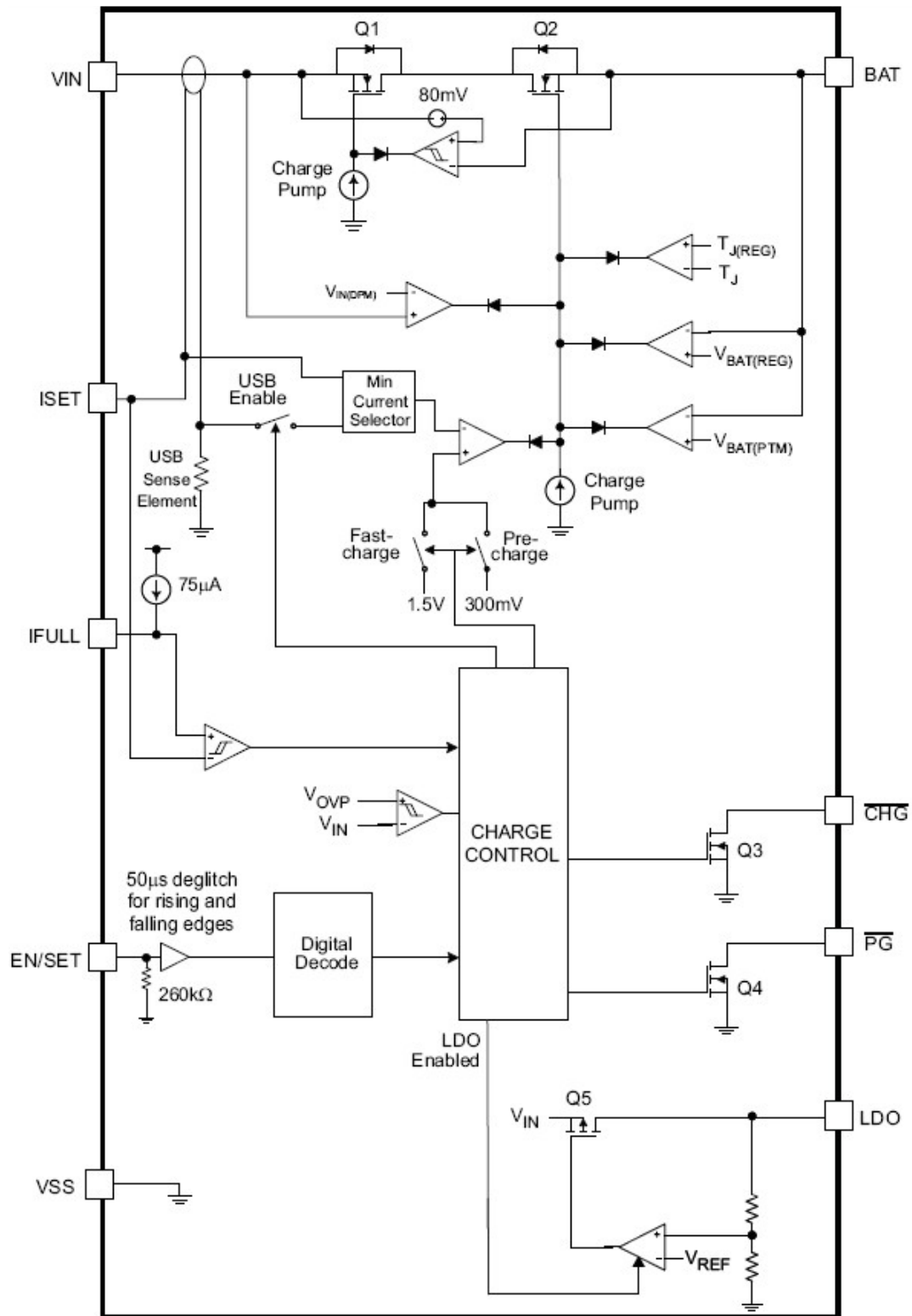


[Figure 3.3.2-1] Charging IC (ISL9221)

3. BB Circuit Technical brief

PIN		I/O	DESCRIPTION
NAME	NO.		
IN	1	I	Input power supply. IN is connected to the external dc supply (ac adapter or USB port). Bypass IN to VSS with at least a 1 μ F ceramic capacitor.
ISET	2	I	Current programming input. Connect a resistor from ISET to VSS to program the fast-charge current when the user programmable mode is selected by EN/SET. If the current limit set by ISET is lower than the USB500 limit, the current is limited by the ISET setting even in USB500 mode. The resistor range is between 475 Ω and 5.36k Ω to set the current between 100 mA and 1.1 A.
VSS	3, 7	–	Ground terminal. Connect to the thermal pad and the ground plane of the circuit.
LDO	4	O	LDO output. LDO is regulated to 4.9V and drives up to 50mA. Bypass LDO to VSS with at least a 1 μ F ceramic capacitor. LDO is enabled when VIN is above the UVLO and less than V _{OVP} . The LDO current is not limited by the input current limit.
IFULL	5	I	Charge done current programming input. Connect a resistor from IFULL to VSS to program the charge done threshold. The CHG output goes high-impedance when I _{BAT} falls to the charge done threshold. The charge done threshold is programmable from 5% to 50% of the fast charge current programmed at ISET.
EN/SET	6	I	One-wire Interface Input. Drive EN/SET with pulses to enable/disable the device and select different modes. See Table 1 for the data map. EN/SET is pulled to VSS with an internal ~260k Ω resistor.
$\overline{\text{CHG}}$	8	O	Charge done indicator open-drain output. $\overline{\text{CHG}}$ is pulled low while the device is charging the battery. $\overline{\text{CHG}}$ goes high impedance when the battery is fully charged and does not indicate subsequent recharge cycles. CHG is high impedance during fault conditions.
$\overline{\text{PG}}$	9	O	Power good open-drain output. $\overline{\text{PG}}$ is an open-drain output that pulls to VSS when the input power is above the battery voltage by 80mV and below the OVP threshold. $\overline{\text{PG}}$ is high impedance when outside this range.
BAT	10	O	Battery connection output. Connect the battery and the system input to BAT. Bypass BAT to VSS with at least a 1 μ F ceramic capacitor. If no battery is installed, the capacitance on the BAT line must be at least 40 μ F. In Production Test Mode, BAT regulates to 4.2V and supplies up to 2.3A.
Thermal PAD	Pad	-	There is an internal electrical connection between the exposed thermal pad and the VSS pin of the device. The thermal pad must be connected to the same potential as the VSS pin on the printed circuit board. Do not use the thermal pad as the primary ground input for the device. VSS pin must be connected to ground at all times.

[Table 3.3.2-1] PIN description of Charging IC



[Figure 3.3.2-1] Block diagram of Charging IC

3.4. Power ON/OFF

[illegible]

Voltage level of PWRON pin is high before push the END_KEY button.
If push the END_KEY button, voltage level of PWRON pin is change from high to low.
ON_OFF1 is a power-on input for SM-POWER3 with active low levels.

3.5 SIM Interface

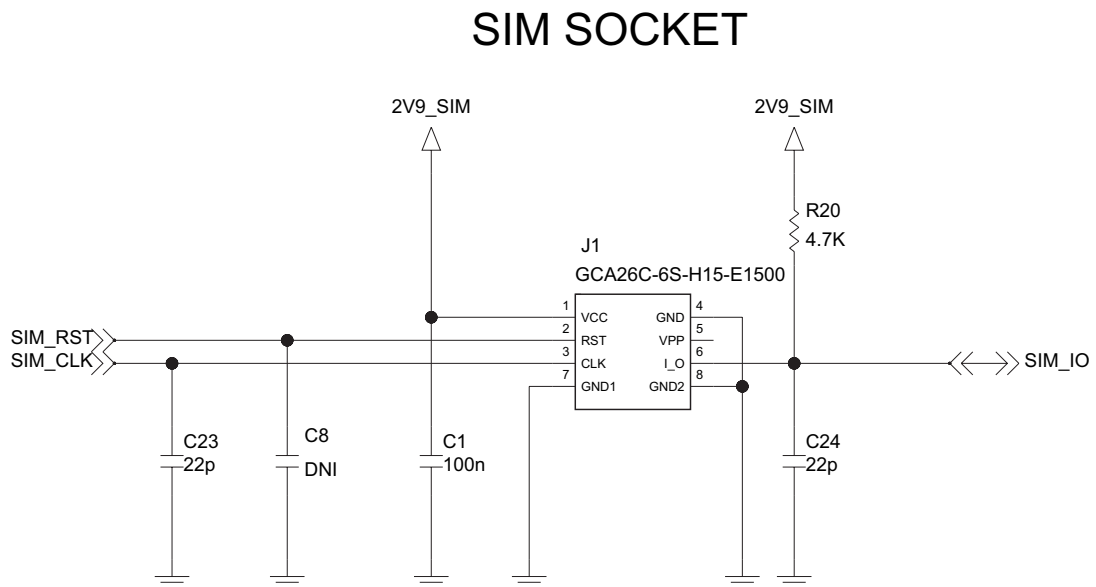
KM555 supports 1.8V & 2.9V plug in SIM. SIM_IO, SIM_CLK, SIM_RST ports are used to communicate with S-Gold3H-LC and the SIM power supply enabled by PMIC.

SIM Interface

SIM_CLK : SIM card reference clock

SIM_RST : SIM card Async /sync reset

SIM_IO : SIM card bidirectional reset



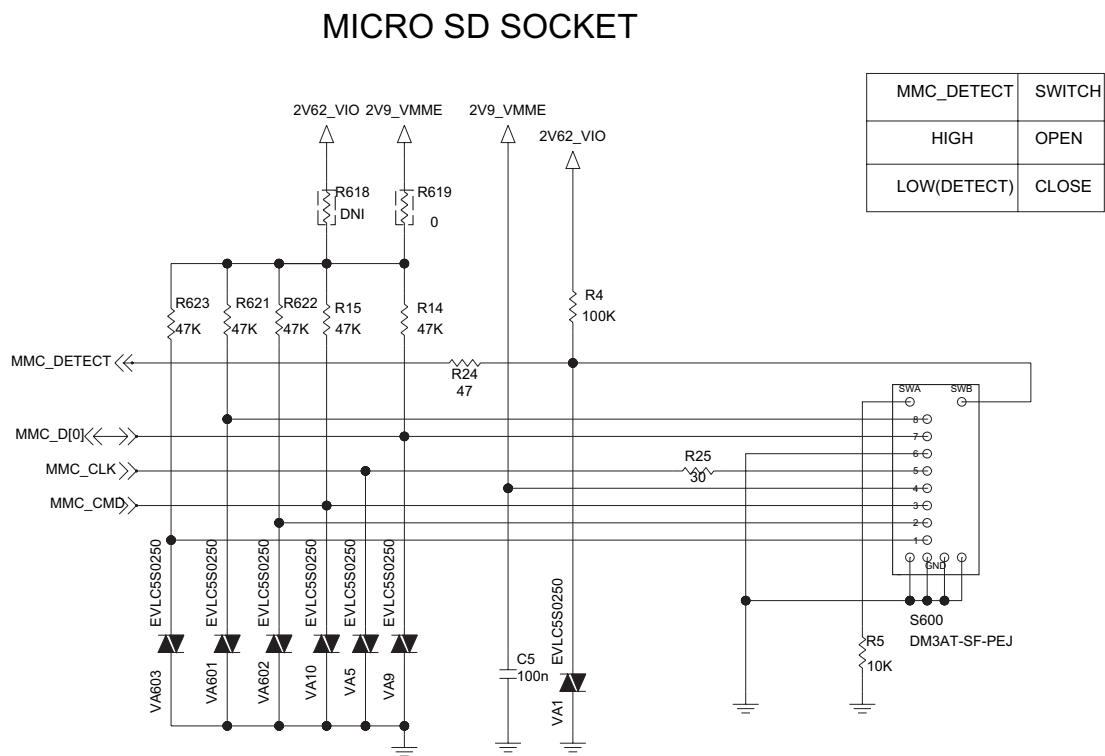
[Figure 3.5-1] SIM Circuit

3. BB Circuit Technical brief

3.6 T - Flash connector

The Micro SD Memory Module has eight exposed contacts on one side.

The PMB8878 connected to the module using a dedicated eight-pin connector

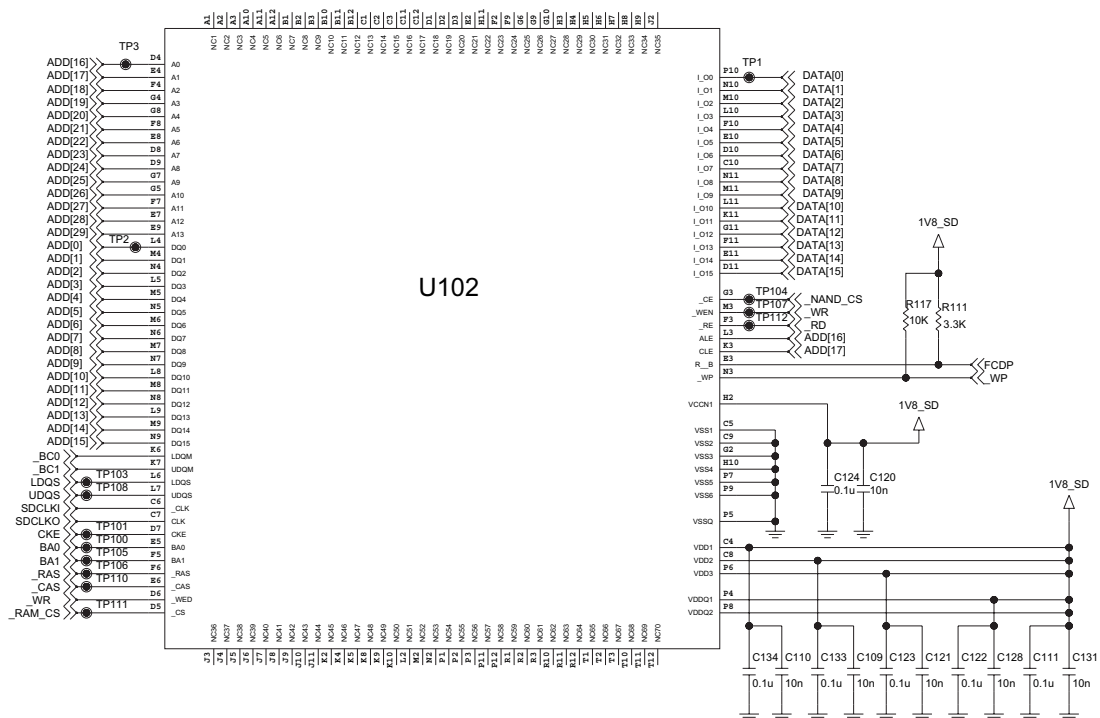


[Figure 3.6-1] T-Flash Connector

3.7 Memory

2Gbit NAND & 1Gbit DDRSDRAM employed on KM555 with 8 & 16 bit parallel data bus thru ADD(0) ~ ADD(29). The 2Gbit NAND Flash memory with DDR SDRAM stacked device family offers multiple high-performance solutions.

2Gb NAND +1Gb DDR SDRAM



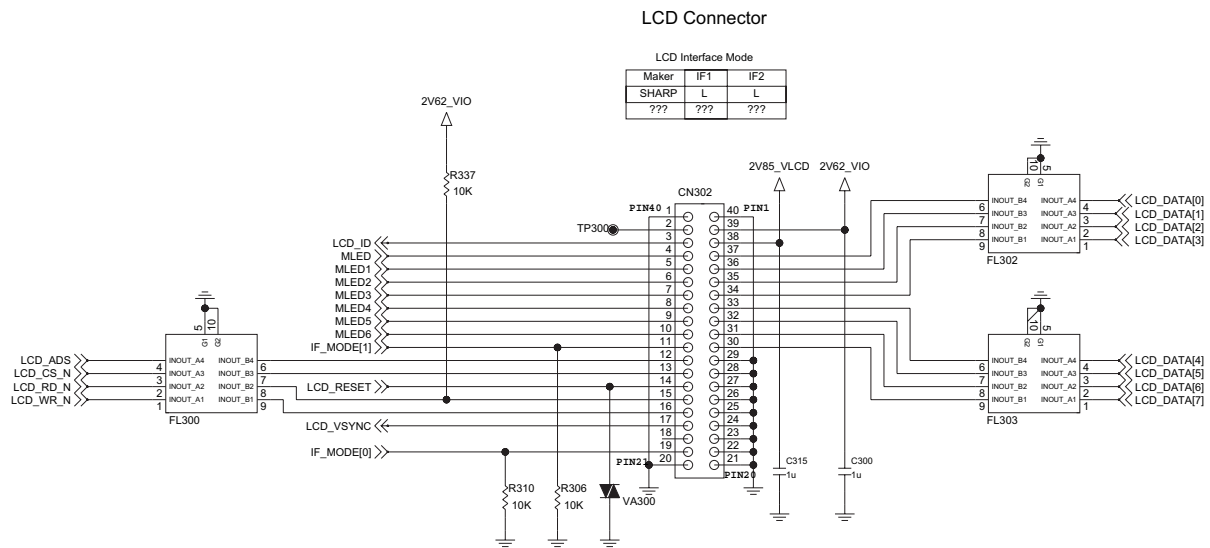
[Figure 3.7-1] Memory circuit diagram

3. BB Circuit Technical brief

3.8 LCD Display

LCD module include:

- Main LCD: 3.0" 240x400 WQVGA, 262K color TFT
- Backlight : 6 piece of white LED

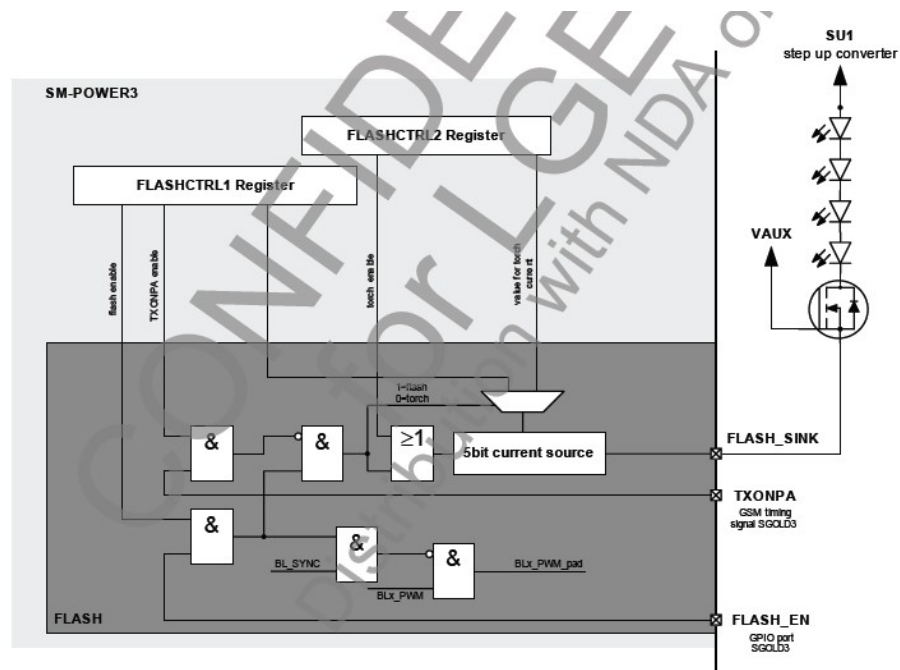


[Figure3.8-1] LCD circuit diagram

3.9 keypad back-light illumination

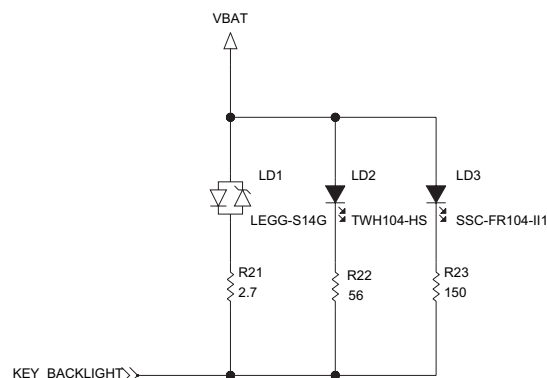
3.9.1 Number keypad back-light illumination

There are 2 snow white color LEDs on Key for keypad illumination. Keypad Back-light is controlled by SM-POWER3 Flash LED port which has constant current control function. The whole configuration of the SM-POWER3 Flash LED drivers is shown in below Figure.



[Figure 3.10.1-1] LED driver in the SM-POWER3

KEY BACKLIGHT



[Figure 3.10.1-2] Number key back-light LED circuit diagram

3.10 LCD back-light illumination

LCD Backlight

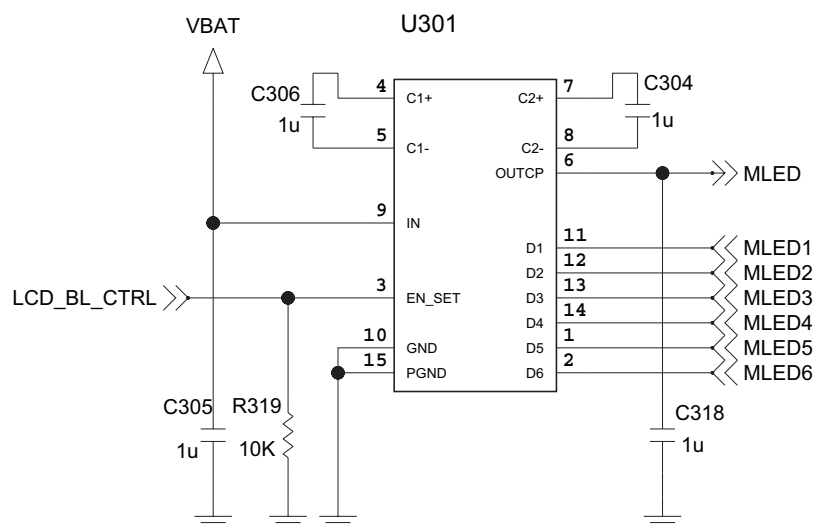


Figure 12 LCD Back light unit and Flash LED charge pump IC

The AAT3169 is a write-only single wire interface. It provides access to up to 32 registers that control device functionality. In this system, two sets of pulse trains are transmitted via the SPIF pin. The first pulse set is used to set the desired address. After the bus is held high for the address hold period, the next pulse set is used to write the data value. After the data pulses are transmitted the bus is held high again for the data hold period to signify the data write is complete. At this point the slave device latches the data into the address that was selected by the first set of pulses. The protocol for using this interface is described in the following subsection.

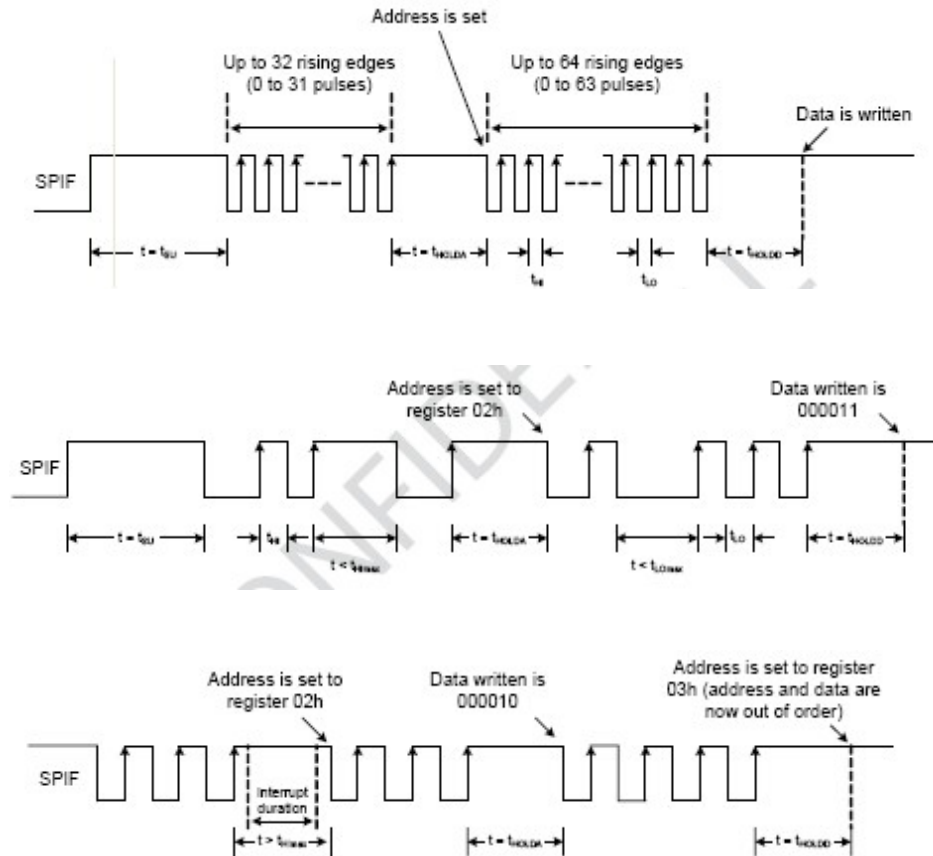
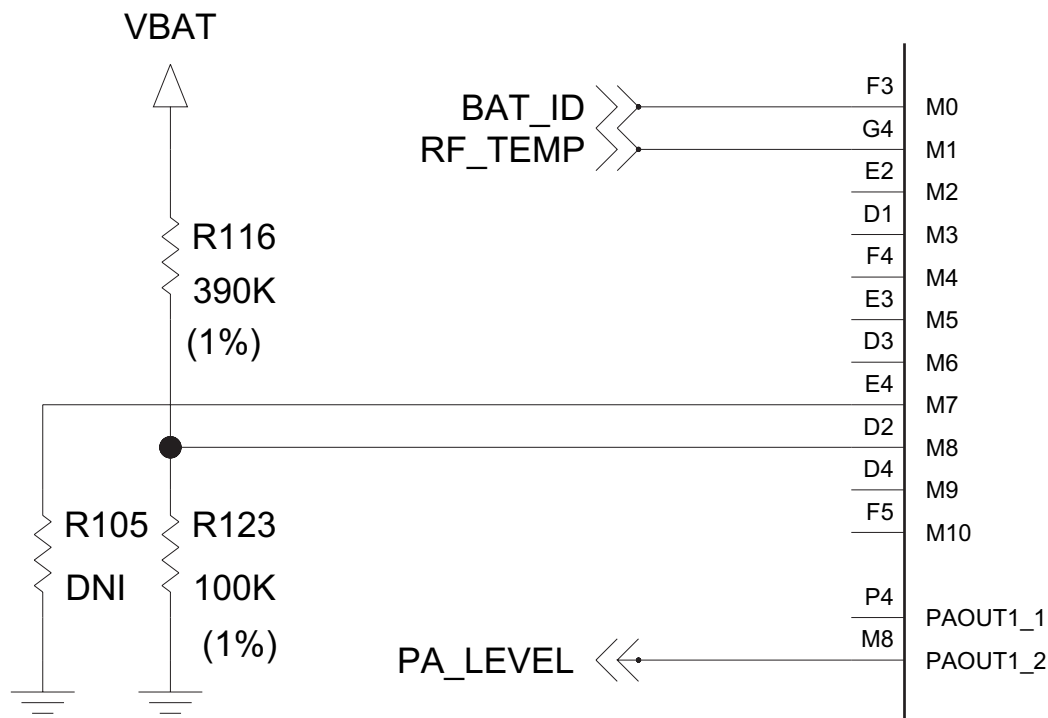


Figure 13 I2C Serial data port control method

3.11 Battery voltage monitor

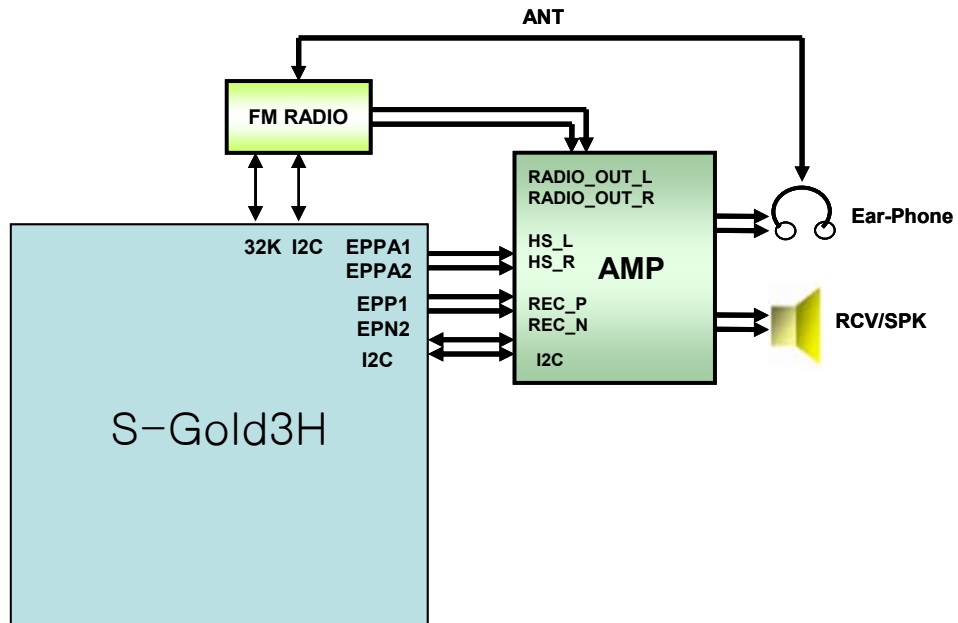
S-Gold3H(PMB8878) is monitor battery capacity with ADC port.



[Figure3.12-1] Battery voltage monitor circuit diagram

3.12 Audio

KM555 Audio signal flow diagram as following diagram.



[Figure 3.13-1] Audio signal flow diagram

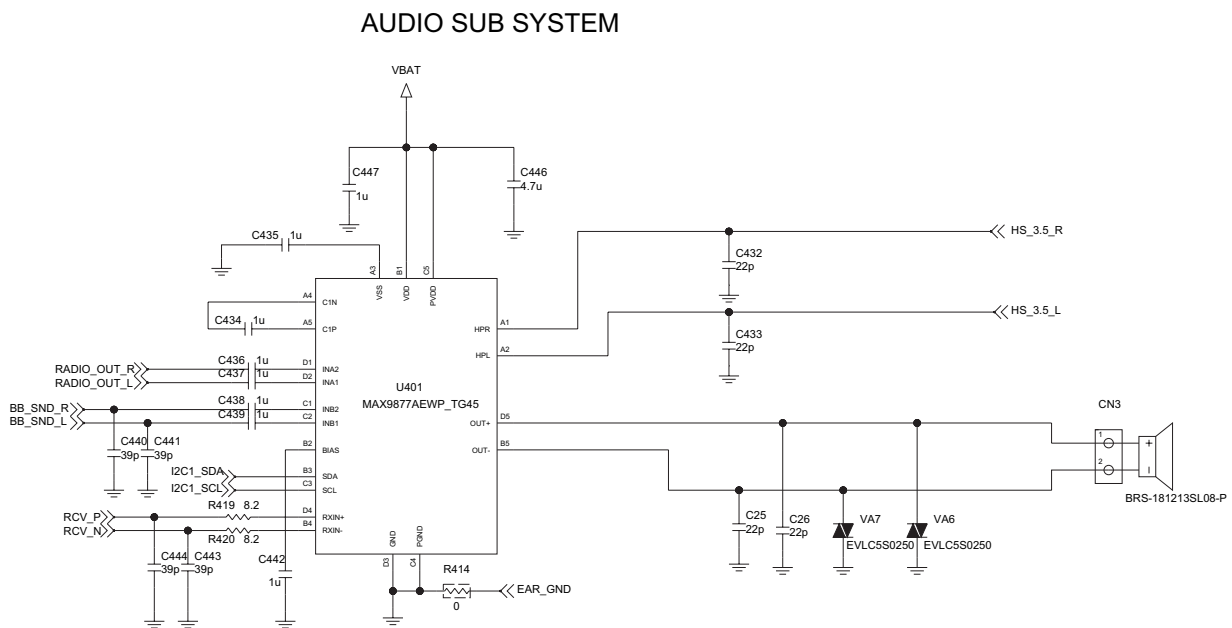
3. BB Circuit Technical brief

3.12.1 Audio amplifier

KM555 use external AMP(MAX9877AEWP_TG45).

MAX9877AEWP combines a high efficiency Class D audio power amplifier with a stereo Class AB capacitor-less Direct Drive headphone amplifier.

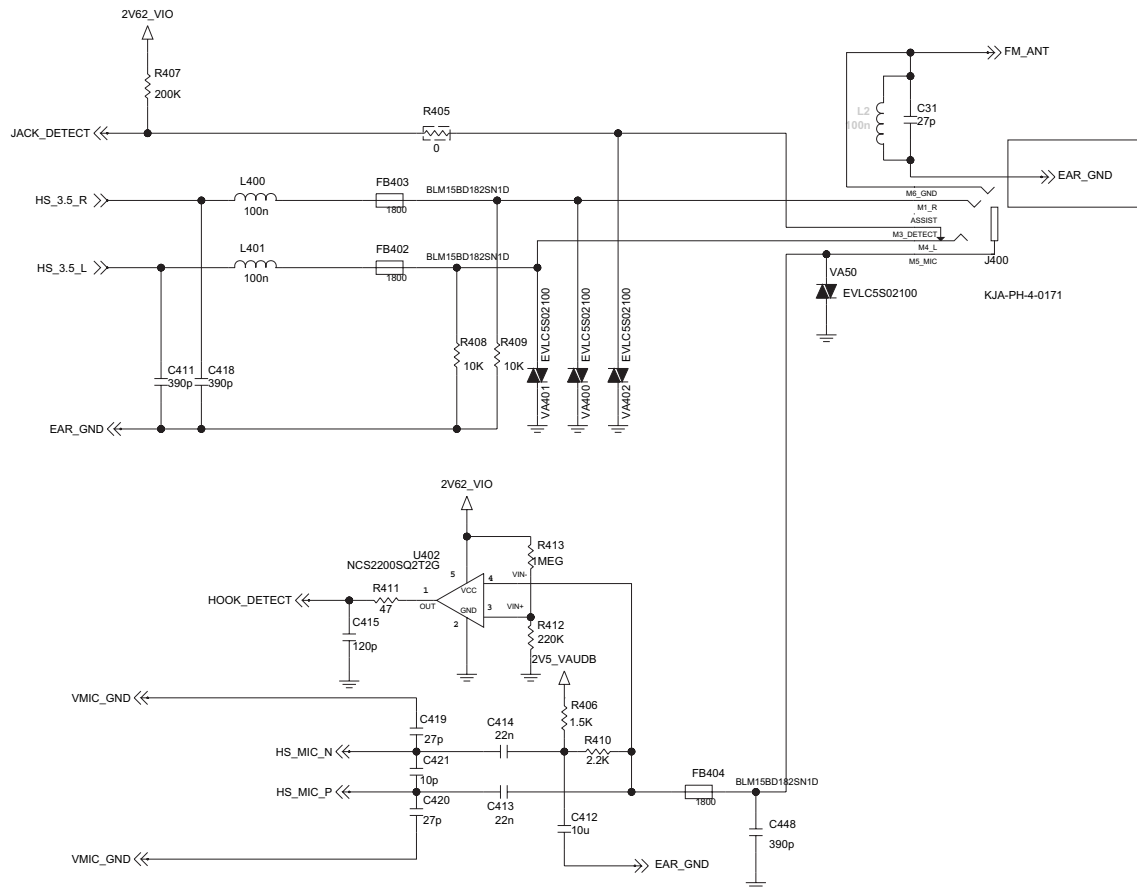
MAX9877AEWP delivers up to 725mW from a 3.7V supply into an 8ohm load with 87% efficiency to extend battery life.



[Figure 3.13.1-1] Audio circuit diagram

3.12.2 Headset circuit

3.5phi HEADSET

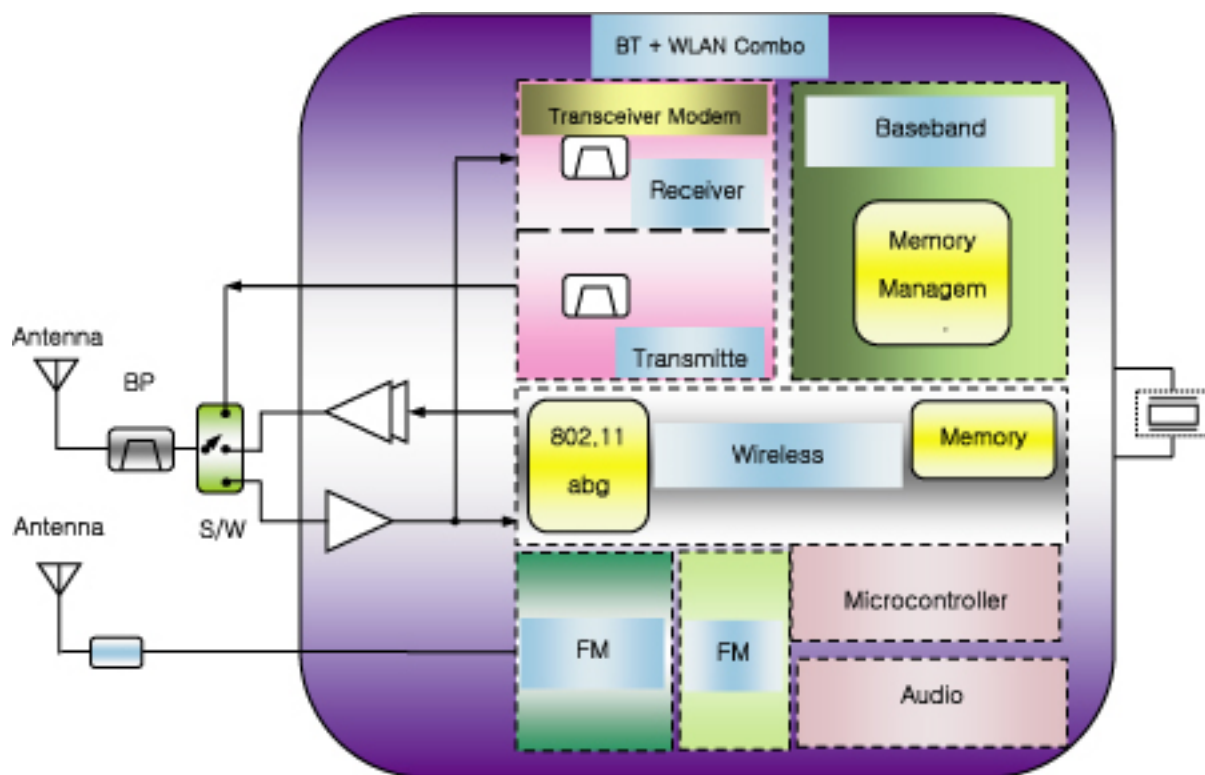


[Figure 3.13.3-1] Headset circuit diagram

3.13 WLAN/Bluetooth/FM (RWFS-B971A)

General Description

The KM555 device provides the highest level of integration for a mobile wireless system, with integrated IEEE802.11 b/g (MAC/baseband/radio), Bluetooth 2.1, and FM receiver. The RWFS-B971A that is included of BCM4325 solution is supported three kinds of functions. It is the one antenna structure which is supported of WLAN/Bluetooth in 2.4GHz and



[Figure 3.14] WLAN/Bluetooth System Architecture

3.13.1 WLAN

The KM555 supports single-band 2.4GHz IEEE802.11b/g standardization. The WLAN module which is consisted of the BCM4325 single chip device provides for the highest level of integration for a mobile or handheld wireless system, with integrated IEEE802.11TM b/g (MAC/baseband/radio). The BCM4325's integrated CMOS WLAN 2.4GHz power amplifier provide sufficient output power to meet the need of most WLAN devices. The interface between PMB8878 and WLAN module is the standard interfaces SDIO v1.2 (4-bit and 1-bit).

[Figure3.14] shows the WLAN system architecture in the KM555

3.13.2 Bluetooth

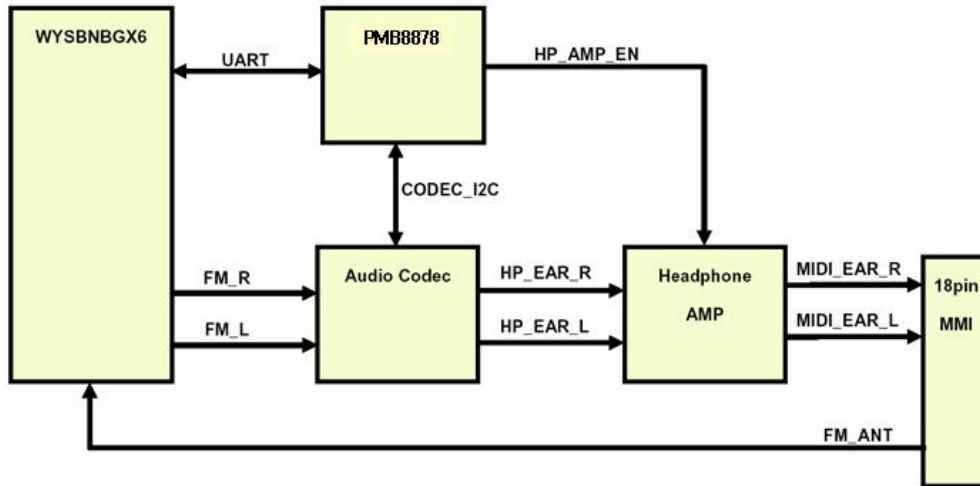
The KM555 provides the Bluetooth 2.1 specification. The Bluetooth module is the optimal solution for any voice or data application that requires the Bluetooth SIG standard Host Controller Interface (HCI) using a high-speed UART and PCM. The Bluetooth solution has an integrated radio transceiver that has been optimized for 2.4GHz Bluetooth wireless systems. It has been designed to provided low power,

low-cost, robust communications for applications operating in the globally available 2.4GHz unlicensed ISM band. It is fully compliant with the Bluetooth Radio Specification and meets or exceeds the requirements to provide the highest communication link quality of service. [Figure3.14] also shows the Bluetooth system architecture in the KM555.

3.13.3 FM Radio

This FM is a function of RWFS-B971A module, electronically tuned, FM stereo radio with RDS/RBDS demodulator and decoder for low voltage applications, with fully integrated IF selectivity and demodulation. This equipment supports the European Radio Data System (RDS) and the North American Radio Broadcast Data System (RBDS) modulations. The FM unit supports I2C for Communications, stereo analog output, as well as I2S and PCM interfaces. [Figure3.14.3] shows the FM Radio system architecture in the KM555.

3. BB Circuit Technical brief



[Figure 3.14.3] FM Radio system architecture.

3.14 5PIN Interface connector

[Table 3.15-1] PIN assign

	KF500 MMI	
	Pin Function	Description
1	V_BUS	Charger voltage
2	USW_DM	USB/ Remote control Key ADC/ Headset left sound
3	USW_DP	USB/ Remote control interrupt/ Headset Right sound
4	USW_ID	
5~15	GND	Power GND

4. RF Circuit Technical Brief

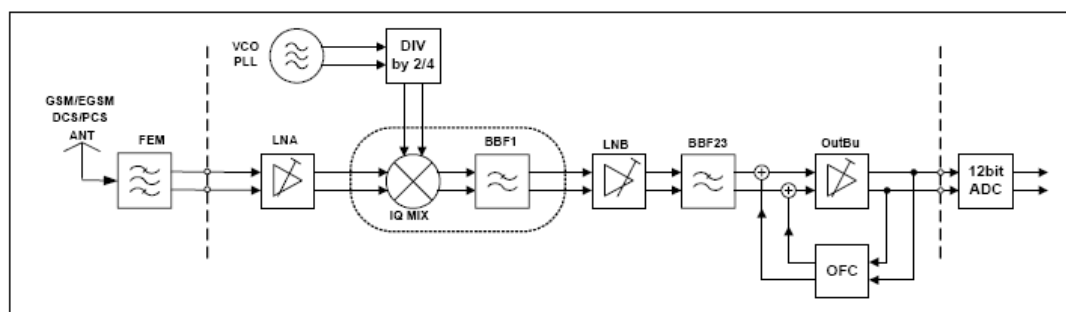
The PMB 6952 SMARTi 3GE combines the SMARTiPM quad-band GSM/EDGE and SMARTi3G triple-band W-CDMA transceivers in a laminate based PG-TFSGA-121-2 package. A significant circuit board area reduction is achieved compared to using separately packaged transceivers. SMARTiPM is a quad-band transceiver for GSM850/GSM900/ GSM1800/GSM1900 voice and data applications. SMARTiPM features a direct conversion receiver and a quad-band polar modulator transmitter for





4.2 GSM Part

4.2.1 GSM Receiver

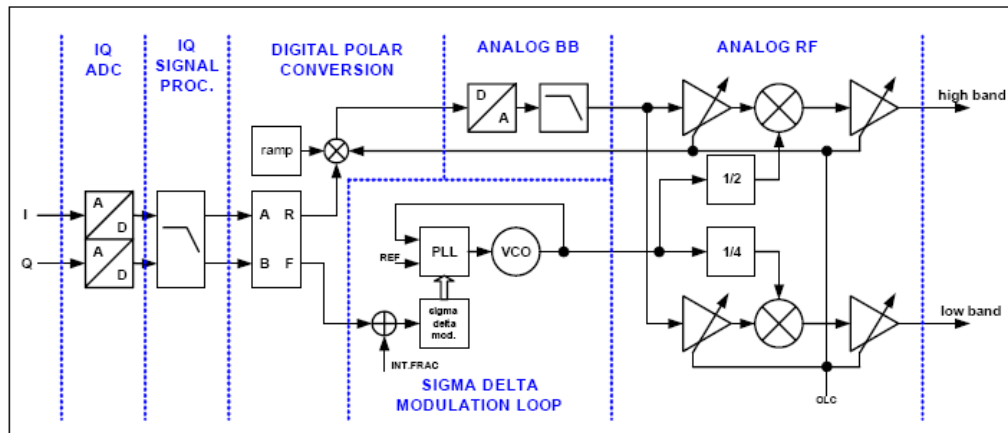


[Figure 4.2.1-1] GSM Receiver Part Block Diagram

The constant gain direct conversion receiver contains all active circuits for a complete receiver chain for GSM/GPRS/EDGE (see [Figure 4.2.1-1]). The GSM850/900/DCS1800/ PCS1900 LNAs with balanced inputs are fully integrated. No interstage filtering is needed. The orthogonal LO signals are generated by a divider-by-four for GSM850/900 band and a divider-by-two for the DCS1800/PCS1900 band. Down conversion to baseband domain is performed by low/high band quadrature direct down conversion mixers. The baseband chain contains a LNB (low noise buffer), channel filter, output buffer and DC-offset compensation. The 3rd order lowpass filter is fully integrated and provides sufficient suppression of blocking signals as well as adjacent channel interferers and avoids anti-aliasing through the baseband ADC. The receive path is fully differential to suppress on-chip interferences. Several gain steps are implemented to cope with the dynamic range of the input signals. Depending on the baseband ADC dynamic range, single- or multiple gain step switching schemes are applicable. Furthermore an automatic DC-offset compensation can be used (depending on the gain setting) to reduce the DC-offset at baseband-output. A programmable gain correction can be applied to correct for front end- and receiver gain tolerances.

4. RF Circuit Technical Brief

4.2.2 GSM Transmitter



[Figure 4.2.2-1] GSM Transmitter Part Block Diagram

The GMSK transmitter supports power class 4 for GSM850 and GSM900 as well as power class 1 for DCS1800 and PCS1900. The digital transmitter architecture is based on a very low power fractional-N Sigma-Delta synthesizer without any external components (see [Figure 4.2.2-1]). The analog I/Q modulation data from the baseband is converted to digital, filtered and transformed to polar coordinates. The phase/frequency signal is further on processed by the Sigma-Delta modulation loop. The output of its associated VCO is divided by four or two, respectively, and connected via an output buffer to the appropriate single ended output pin. This configuration ensures minimum noise level.

The 8PSK transmitter supports power class E2 for GSM850 and GSM900 as well as for DCS1800 and PCS1900. The digital transmitter architecture is based on a polar modulation architecture, where the analog modulation data (rectangular I/Q coordinates) is converted to digital data stream and is subsequently transformed to polar coordinates by means of a CORDIC algorithm. The resulting amplitude information is fed into a digital multiplier for power ramping and level control. The ready processed amplitude signal is applied to a DAC followed by a low pass filter which reconstructs the analog amplitude information. The phase signal from the CORDIC is applied to the Sigma-Delta fractional-N modulation loop. The divided output of its associated VCO is fed to a highly linear amplitude modulator, recombining amplitude and phase information. The output of the amplitude modulator is connected to a single ended output RF PGA for digitally setting the wanted transmit power.

The PA interface of SMARTi 3GE supports direct control of standard dual mode power amplifiers (PA's) which usually have a power control input VAPC and an optional bias control pin VBIAS for efficiency enhancement. In GMSK mode, the PA is in saturated high efficiency mode and is controlled via its VAPC pin directly by the baseband ramping DAC. In this way both up- / down-ramping and output power level are set. In 8PSK mode, the ramping functionality is assured by an on-chip ramping generator, whereas output power is controlled by the PGA's as described above.

4.2.3 GSM RF Synthesizer

The SMARTi 3GE contains a fractional-N sigma-delta synthesizer for the frequency synthesis in the RX operation mode. For TX operation mode the fractional-N sigma-delta synthesizer is used as Sigma-Delta modulation loop to process the phase/frequency signal. The 26MHz reference signal is provided by the internal crystal oscillator. This frequency serves as comparison frequency of the phase detector and as clock frequency for all digital circuitry.

The divider in the feedback path of the synthesizer is carried out as a multi-modulus divider (MMD). The loop filter is fully integrated and the loop bandwidth is about 100 kHz to allow the transfer of the phase modulation. The loop bandwidth is automatically adjusted prior to each slot (OLGA²). To overcome the statistical spread of the loopfilter element values an automatic loopfilter adjustment (ALFA) is performed before each synthesizer startup.

The fully integrated quad-band VCO is designed for the four GSM bands (850, 900, 1800, 1900 MHz) and operates at double or four times transmit or receive frequency. To cover the wide frequency range the VCO is automatically aligned by a binary automatic band selection (BABS) before each synthesizer startup.

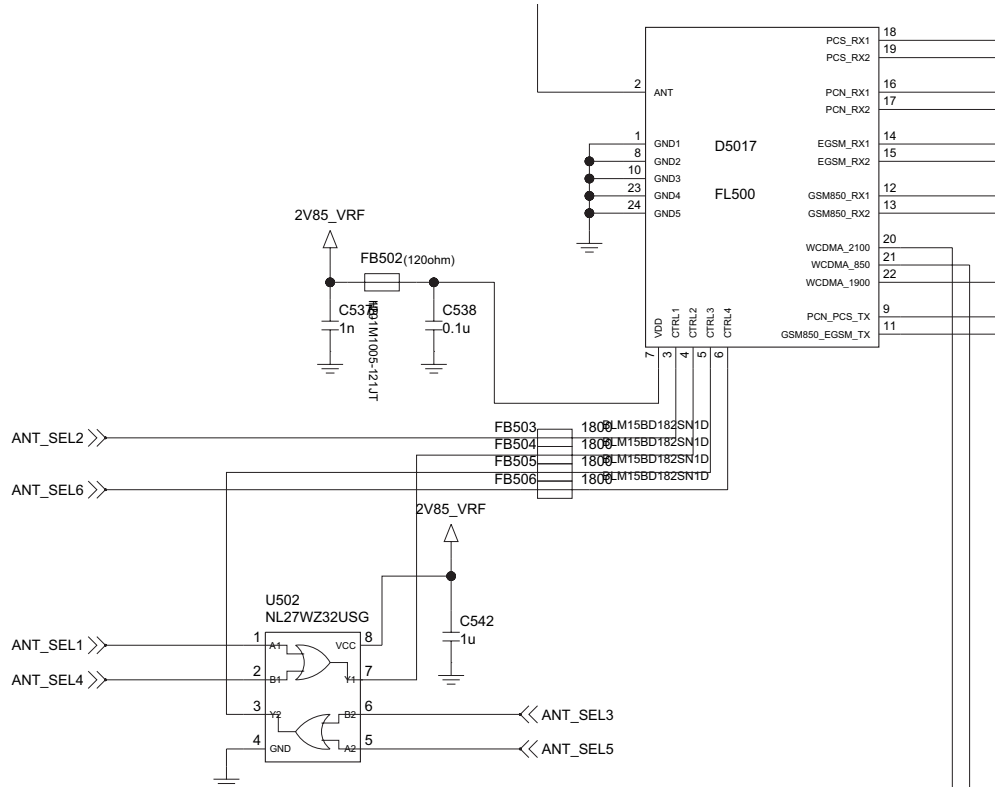
4.2.4 Reference Oscillator

The SMARTi 3GE comprises three 26MHz reference frequency outputs for the GSM baseband, for the 3G RF and for other subsystems (GPS, Bluetooth, etc.) as well as an reference frequency input for application of an external VCXO module.

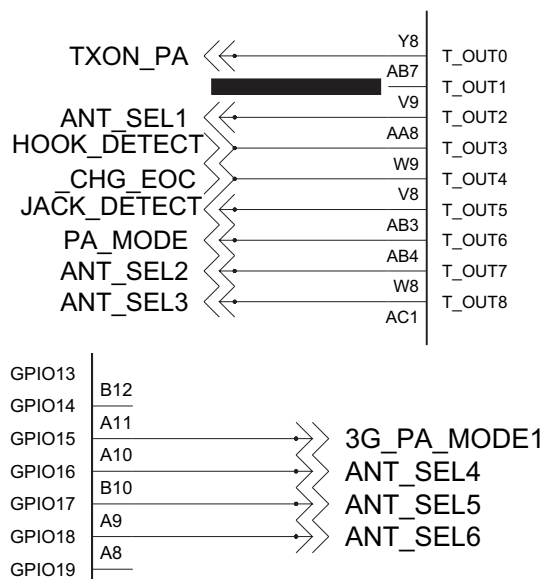
4.2.5 Front End Module Control

Implemented in the SMARTi 3GE are two outputs for direct control of GSM front end modules with two logic input pins to select RX- and TX-mode as well as low- and highband operation.

4. RF Circuit Technical Brief



[Figure 4.2.5-1] KM555 Front End Control (FEM input)



[Figure 4.2.5-2] KM555 Front End Control (Control signal from Baseband IC)

CONTROL LOGIC

Mode	Vc1	Vc2	Vc3	Vc4	Vdd
GSM850/900 Tx	High	High	Low	Low	2.65-2.85V
GSM1800/1900 Tx	High	Low	Low	Low	2.65-2.85V
GSM850 Rx	Low	High	High	Low	2.65-2.85V
GSM900 Rx	Low	Low	High	Low	2.65-2.85V
GSM1800 Rx	Low	High	Low	Low	2.65-2.85V
GSM1900 Rx	Low	Low	Low	Low	2.65-2.85V
UMTS1	Low	Low	High	High	2.65-2.85V
UMTS2	Low	High	Low	High	2.65-2.85V
UMTS3	Low	Low	Low	High	2.65-2.85V

High : 1.4 - Vdd (V)
Low : 0 - 0.4 (V)

[Figure 4.2.5-3] KM555 Front End Control Logic Table

4.3 WCDMA Part

The single-chip transceiver is designed to fulfill the W-CDMA UTRA FDD system requirements for bands I, II, III, IV, V, VI and IX. It contains all active circuits required to simultaneously modulate an analog W-CDMA I/Q signal to the TX RF frequency and demodulate a RX RF W-CDMA signal to an I/Q baseband signal.

4.3.1 WCDMA Receiver

The direct conversion receiver for each band consists of:

- fully differential signal path
- RF low noise amplifier (LNA2)
- I/Q demodulator including LO buffer and I/Q divider
- LO including on-chip VCO and synthesizer
- DC offset compensation without external components
- analog channel filter including auto calibration circuit (w/o external components)
- programmable gain control (PGC) controlled by 3-wire bus programming and gain setting unit on-chip
- allpass filter (auto calibrated)
- configurable output drivers (programmable DC voltages and driver currents for different load impedances)

RX Front-End

An external low noise amplifier as well as duplex and interstage filters are needed to form a complete receive chain for each band.

4. RF Circuit Technical Brief

Baseband Processing (analog)

The amplified RF signal is converted by a quadrature demodulator to I and Q signals at baseband frequency. The resulting inphase and quadrature signals are fed into the analog baseband low pass filter (Chebyshev type). An optional, additional filter stage can be activated in order to provide the required selectivity for narrowband blockers. The filter corner frequency is controlled by an on-chip filter alignment circuit. This filter also provides the overall baseband PGC functionality. The differential offset voltage after the demodulator is reduced by an on-chip DC compensation loop. The subsequent last PGC amplifier stage provides 1 dB gain steps. All gains are selected by 3-wire bus program-ming.

4.3.2 Transmitter

The direct-up conversion transmitter for each band consists of:

- fully differential signal path
- configurable input stages (programmable AC and DC input voltages)
- analog channel filter including auto calibration circuit (w/o external components)
- automatic carrier adjustment also featuring compensation of residual I/Q DC offsets
- I/Q modulator including LO buffer and I/Q divider
- LO including on-chip VCO and synthesizer
- RF voltage-controlled gain amplifier (VGA)

For each band, the modulator performs a direct quadrature modulation of the baseband input signals at I and Q. The internally divided RF VCO signal is split into two orthogonal carriers. The gain of the VGA is controlled by the voltage at the control pin TXGC. The robustness against PCB and baseband processor spurious as well as noise is improved by an integrated baseband filter (Butterworth type).

The RF output signal is available at the differential outputs TXOUTH, /TXOUTHX, TXOUTM/TXOUTMX, and TXOUTL/TXOUTLX. The modulator supply voltage must also be applied to these open drain differential outputs.

TX Output Power

The voltage at the VGA control pin TXGC (VGC) should be limited to ensure that the specified maximum output power (minimum Poutmax) is not exceeded. The VGC value at which the specified minimum Poutmax is reached varies from device to device. ACLR and other specifications are only valid for output power levels below the specified minimum Poutmax.

TX Front End

An external power amplifier as well as duplex and interstage filters are needed to form a complete transmit chain for each band.

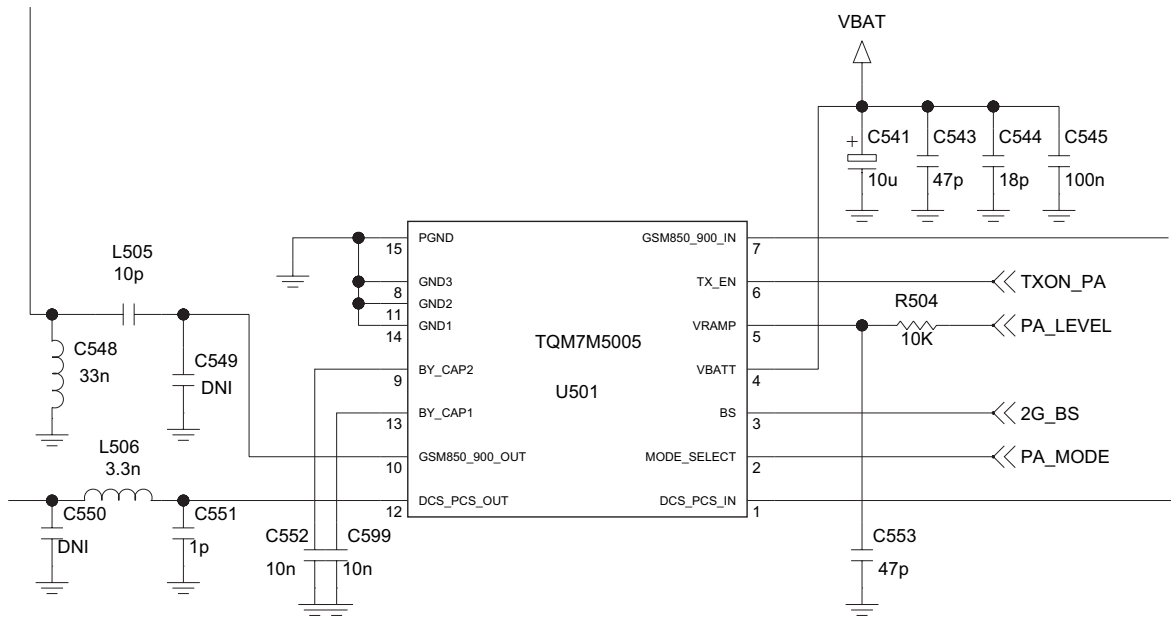
4.3.3 Synthesizer

The receiver and the transmitter contain each a complete fractional-N RF synthesizer with fast locking. The VCO's run at 4 GHz and the RX and TX frequencies are obtained through division by two (bands I, II, III and IV) or four (bands V and VI). The PLL loop filters are fully integrated. The reference frequency has to be provided by an external clock.

The total VCO frequency range is divided in 256 subranges, in order to limit the VCO slope. Before the settling process of the PLL starts, a successive approximation algorithm selects the most appropriate subrange.

4. RF Circuit Technical Brief

4.4 GSM Power Amplifier Module

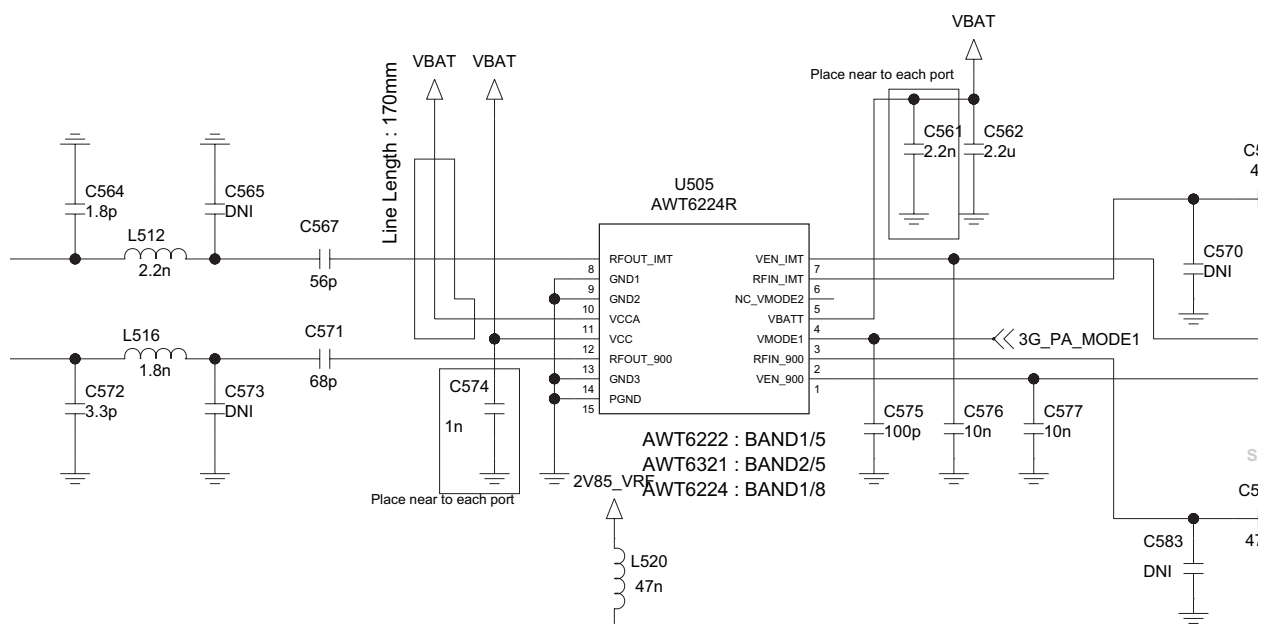


[Figure 4.4-1] Schematic Diagram of 2.5G PAM (TQM7M5005H)

Pin #	Description	Function
1	DCS/PCS in	DCS/PCS RF INPUT – DC blocked
2	MODE SELECT	MODE = High, the PAM operation in EDGE(SPSK) mode MODE = Low, the PAM operation in GMSK mode.
3	BAND SELECT (BS)	BAND SELECT = Low, Low-band active BAND SELECT = High, High-band active
4	VBATT	Battery supply voltage, typ.3.0 – 4.5 V, nom. 1.6A
5	VRAMP	DAC Control signal(analog), Nominal Vramp range is 0.2 to 1.6V GMSK mode – Controls ramp profile and output power EDGE mode – Controls ramp profile
6	TX_EN	TX_EN = High, PA is enabled for operation TX_EN = Low, PA is sleep mode
7	GSM850 / 900 in	GSM850 / GSM900 RF input — DC blocked
10	GSM850 / 900 out	GSM850 / GSM900 RF output — DC blocked
12	DCS / PCS out	DCS / PCS RF output –DC blocked
9,13	Bypass Cap	Connect 0.01uF bypass capacitor as close to pin as practical
8,11,4	GND	Ground

[Table 4.4-1] TQM7M5005H Pin description

4.5 WCDMA Band1/8 Power Amplifier Module



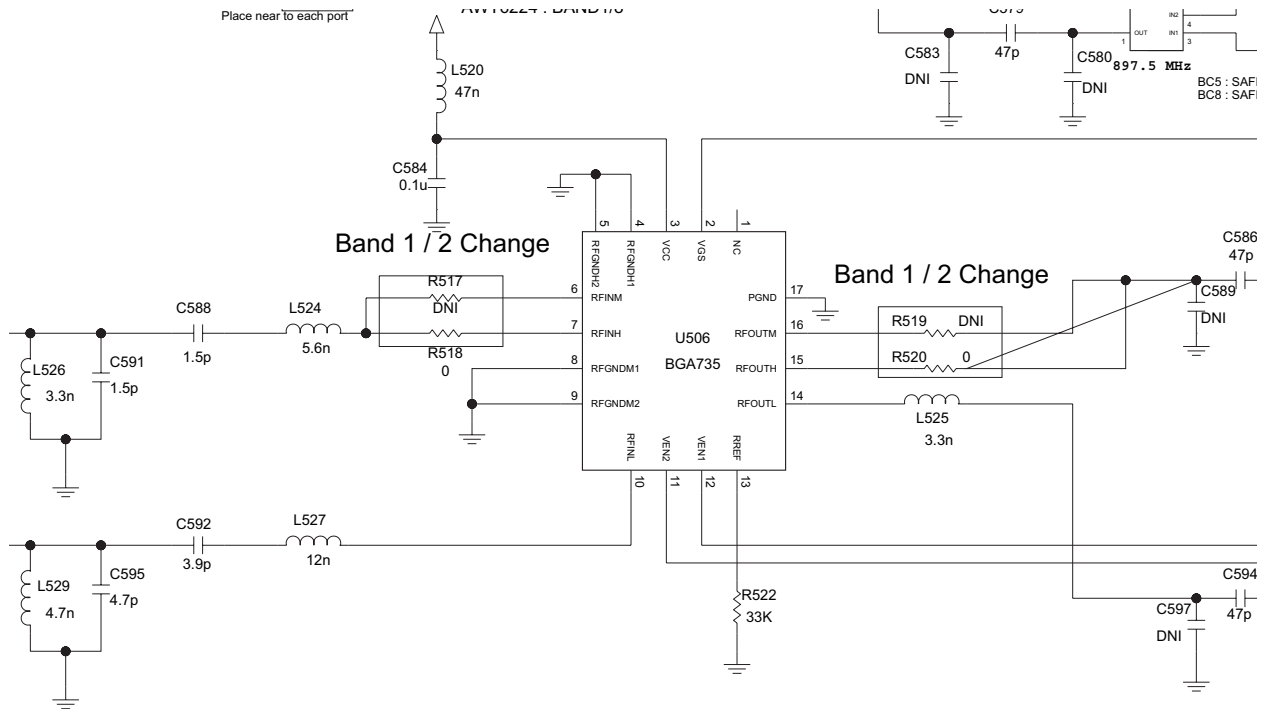
[Figure 4.5-1] Schematic Diagram of WCDMA Band1/8 PAM (AWT6224R)

PIN	NAME	DESCRIPTION
1	V _{EN_900}	Enable Voltage for 900 MHz Band
2	RF _{IN_900}	RF Input for 900 MHz Band
3	V _{MODE1}	Mode Control Voltage 1
4	V _{BATT}	Battery Voltage
5	V _{MODE2} (N/C)	No Connection
6	RF _{IN_IMT}	RF Input for IMT Band
7	V _{EN_IMT}	Enable Voltage for IMT Band
8	RF _{OUT_IMT}	RF Output for IMT Band
9	GND	Ground
10	GND	Ground
11	V _{CCA}	Battery Voltage A
12	V _{CC}	Supply Voltage
13	RF _{OUT_900}	RF Output for 900 MHz Band
14	GND	Ground

[Table 4.5-1] AWT6224R Pin description

4. RF Circuit Technical Brief

4.6 WCDMA Band1/8 Low Noise Amplifier

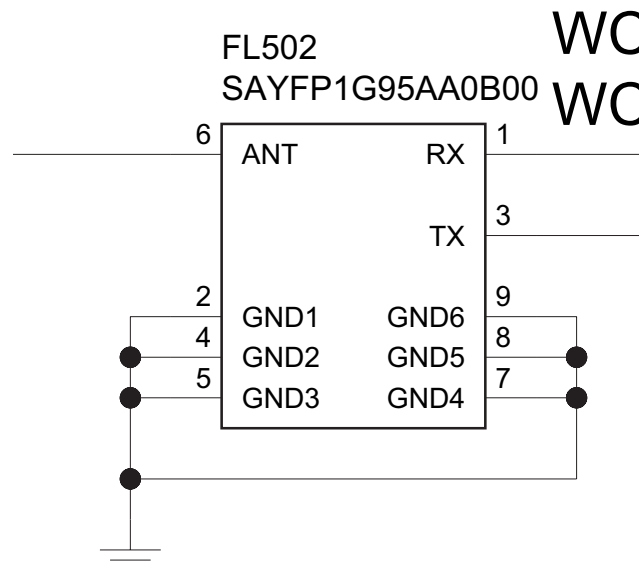


[Figure 4.6-1] Schematic Diagram of WCDMA Band1/8 LNA (BGA735L16)

Pin Number	Symbol	Function
0	GND	Package paddle - RF ground connection for low band (800 MHz) LNA, DC ground for bias and logic circuitry
1		n/c
2	VGS	Gain control logic input
3	VCC	Supply voltage
4, 5	RFGNDH	High band (2100 MHz) LNA RF ground
6	RFINM	Mid band (1900 MHz) LNA input
7	RFINH	High band (2100 MHz) LNA input
8, 9	RFGNDM	Mid band (1900 MHz) LNA RF ground
10	RFINL	Low band (800 MHz) LNA input
11	VEN2	Band select logic input
12	VEN1	Band select logic input
13	RREF	Bias current reference resistor
14	RFOUTL	Low band (800 MHz) LNA output
15	RFOUTH	High band (2100 MHz) LNA output
16	RFOUTM	Mid band (1900 MHz) LNA output

[Table 4.6-1] BGA735L16 Pin description

4.7 WCDMA Band1 Duplexer



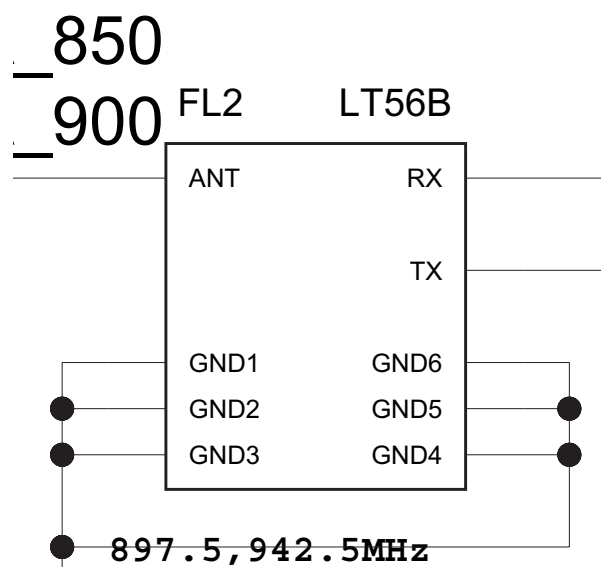
[Figure 4.7-1] Schematic Diagram of WCDMA Band1 Duplexer

Pin configuration

- 1 RX Output
- 3 TX Input
- 6 Antenna
- 2, 4, 5 To be grounded
- 7, 8, 9 To be grounded

[Table 4.7-1] SAYFP1G95AA00B00 Pin description

4.8 WCDMA Band8 Duplexer



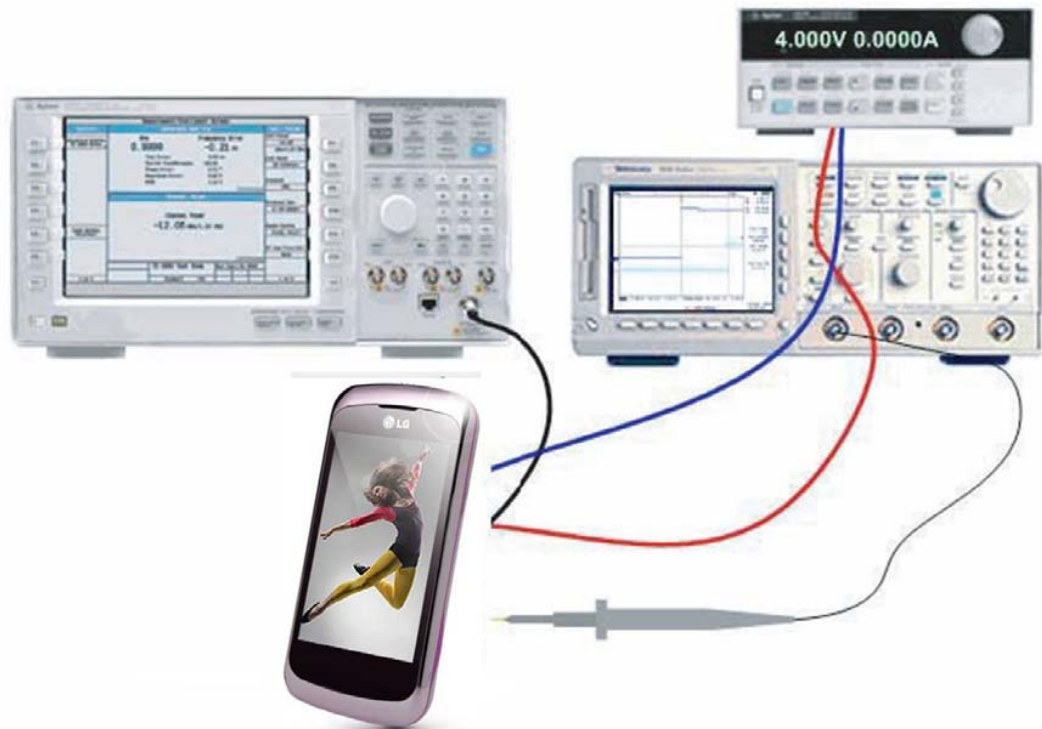
[Figure 4.8-1] Schematic Diagram of WCDMA Band8 Duplexer

Pin configuration	
■ 1	RX output, single ended
■ 3	TX input, single ended
■ 6	Antenna
■ 2,4,5,7,8,9	Ground

[Table 4.8-1] LT56B Pin description

5. Trouble shooting

5.1. Trouble shooting test setup



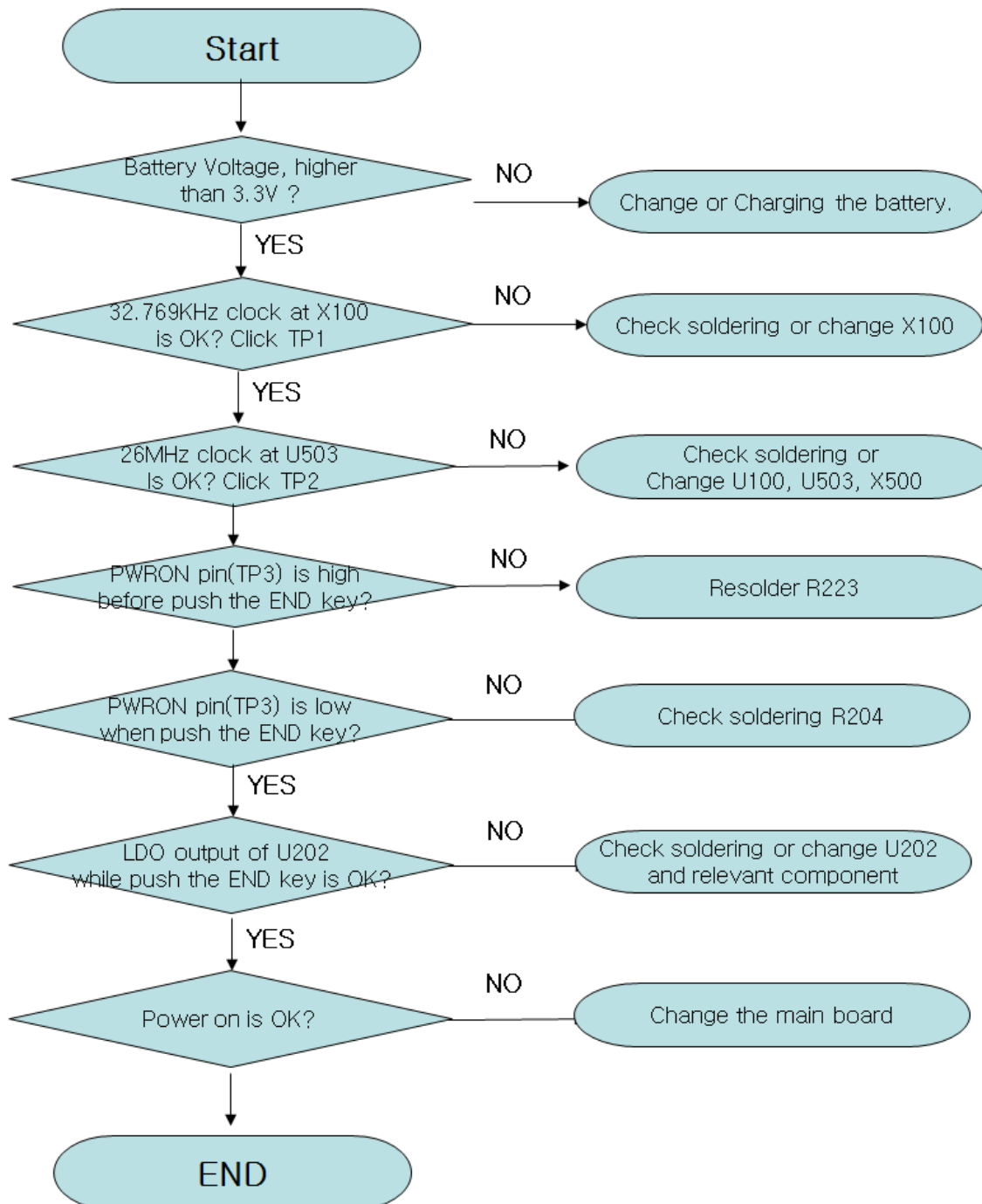
Equipment setup

Power on all of test equipment

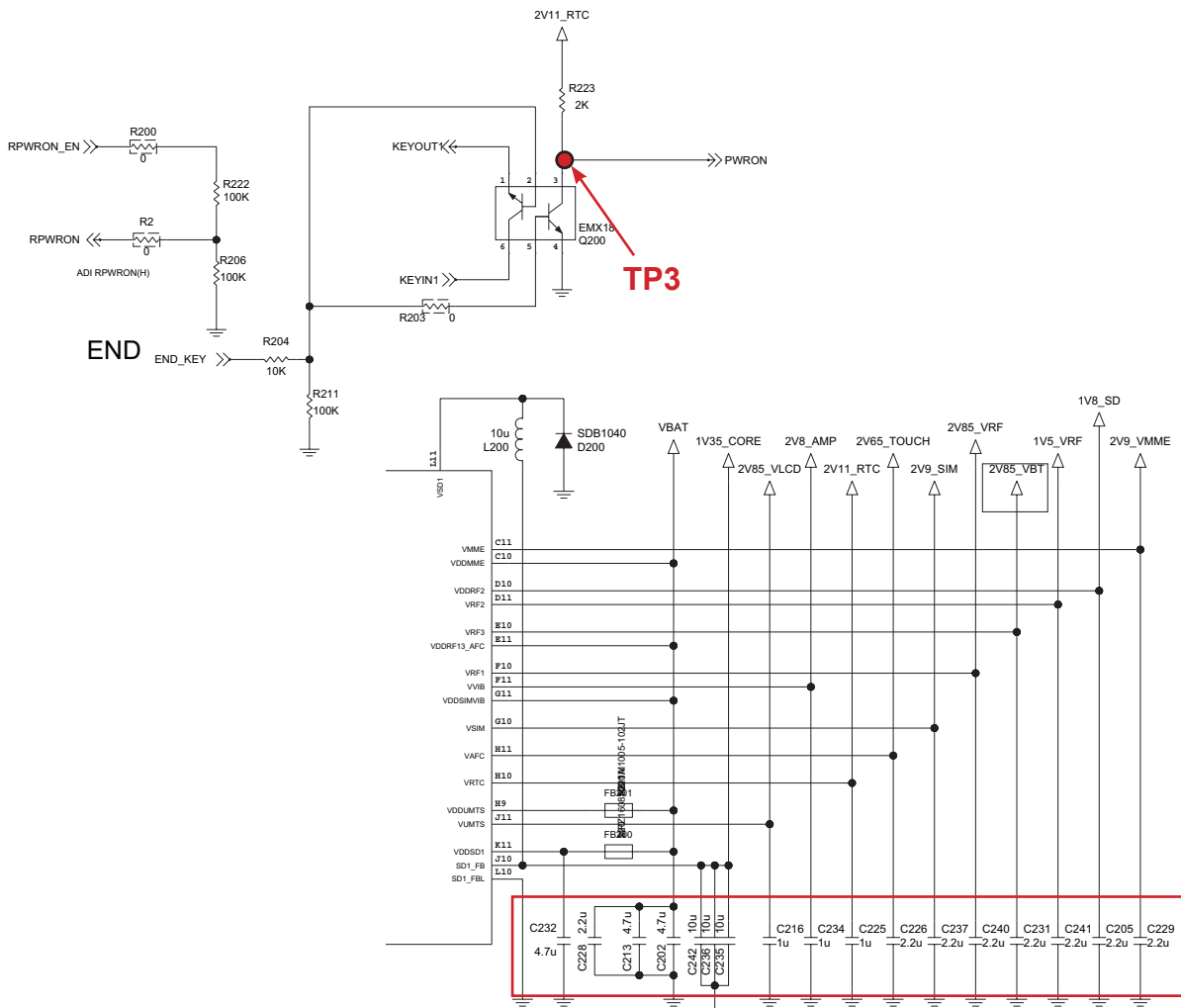
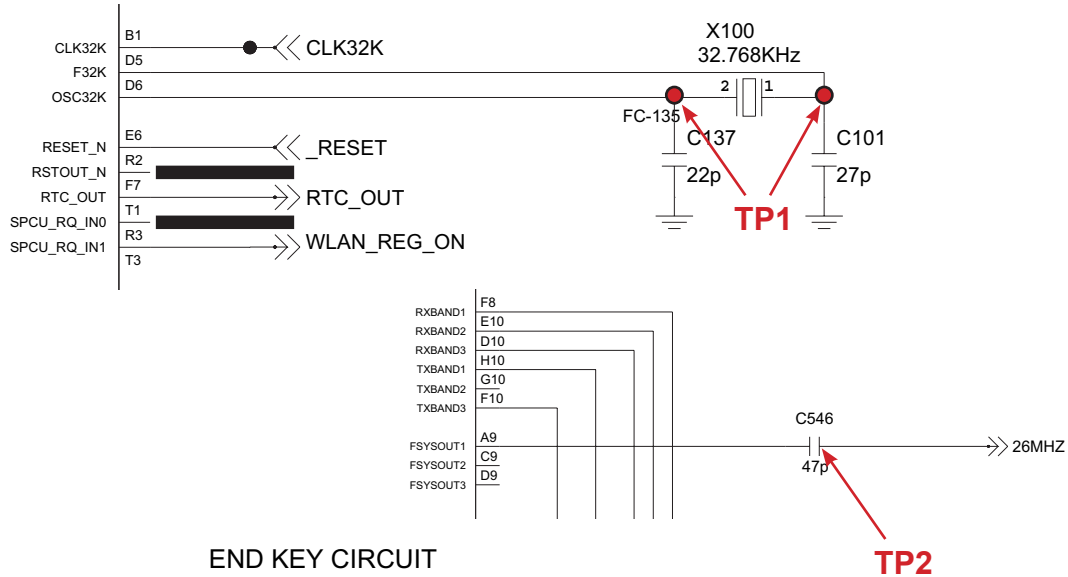
- Connect PIF-UNION JIG or dummy battery to the DUT for power up.
- Connect mobile switch cable between Communication test set and DUT when you need to make a phone call.
- Follow trouble shooting procedure

5. Trouble shooting

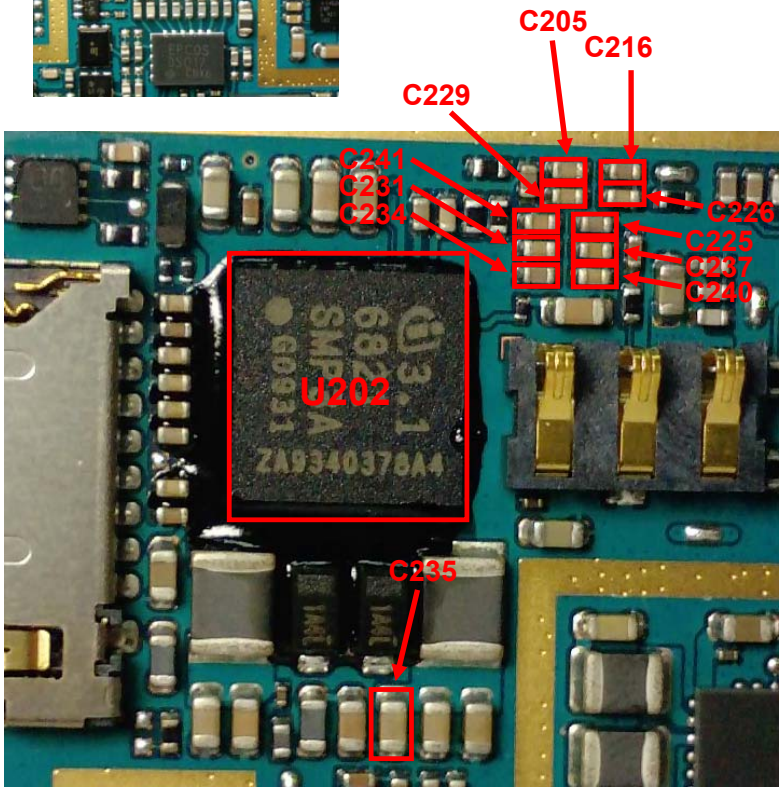
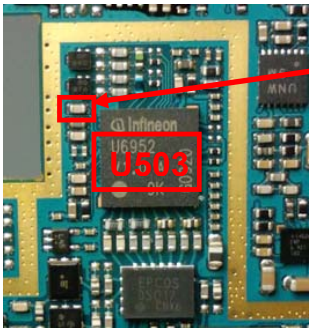
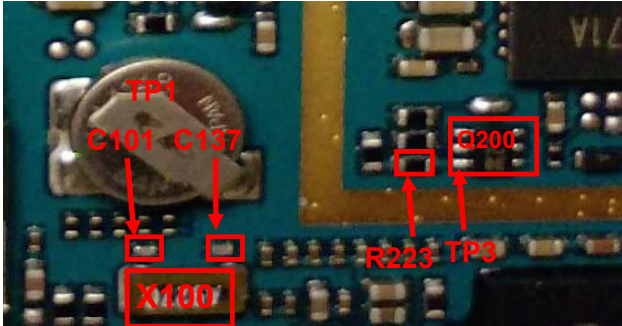
5.2. Power on trouble



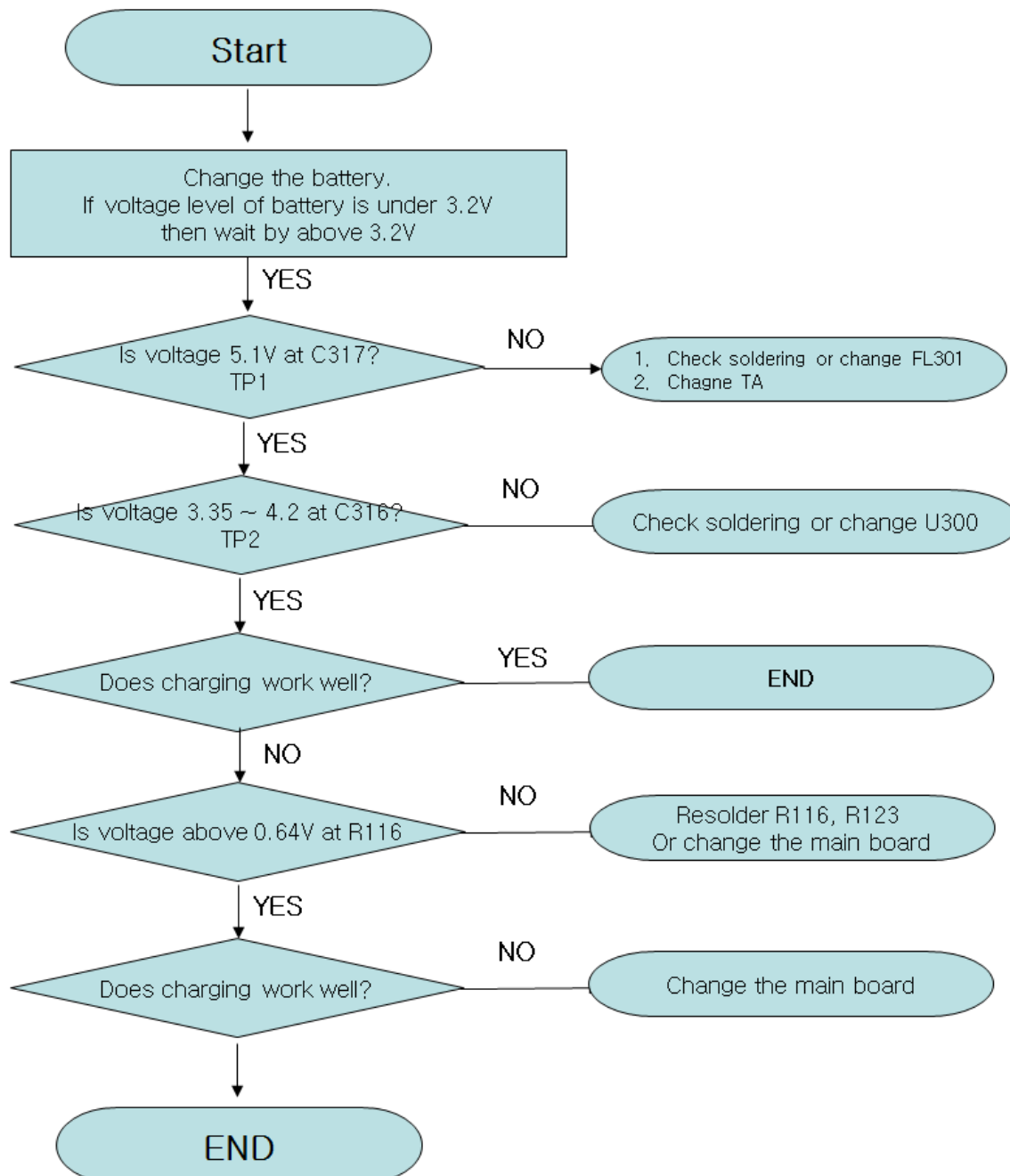
5. Trouble shooting



5. Trouble shooting

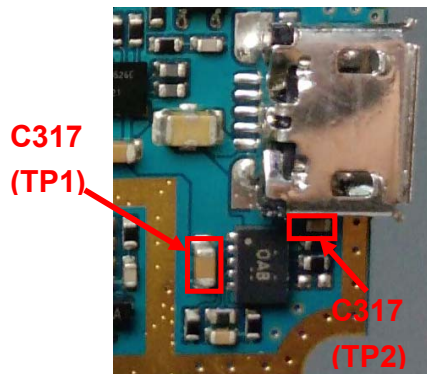
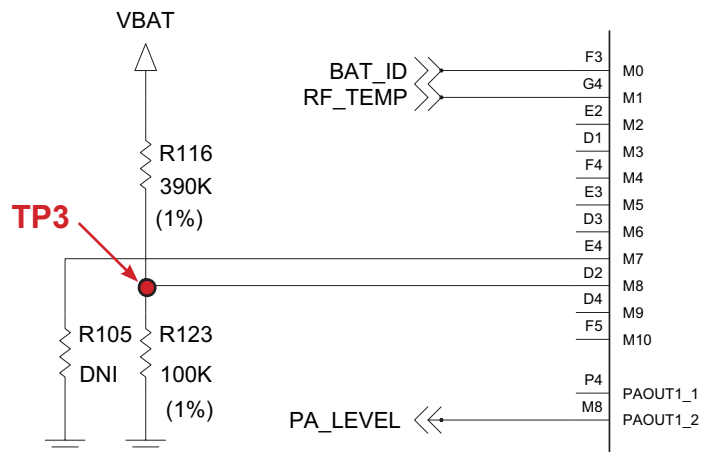
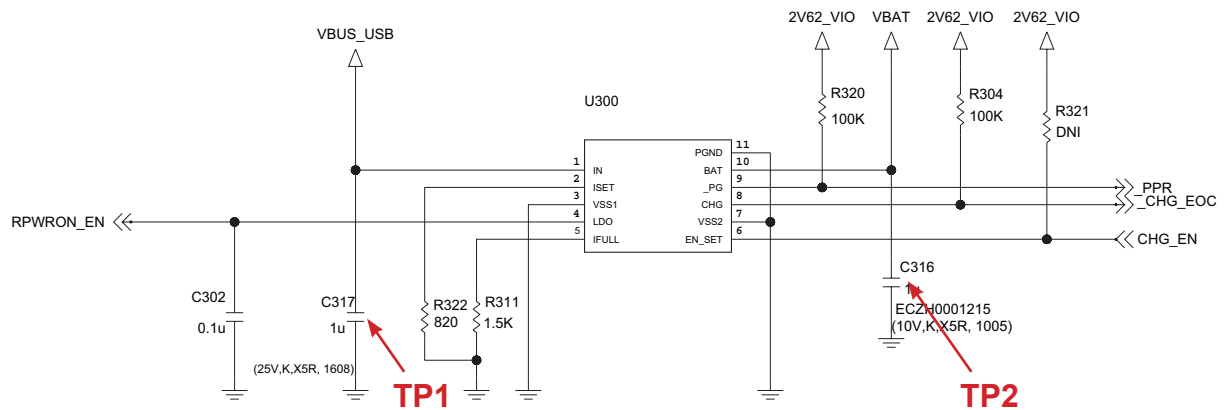


5.3 Charging Trouble

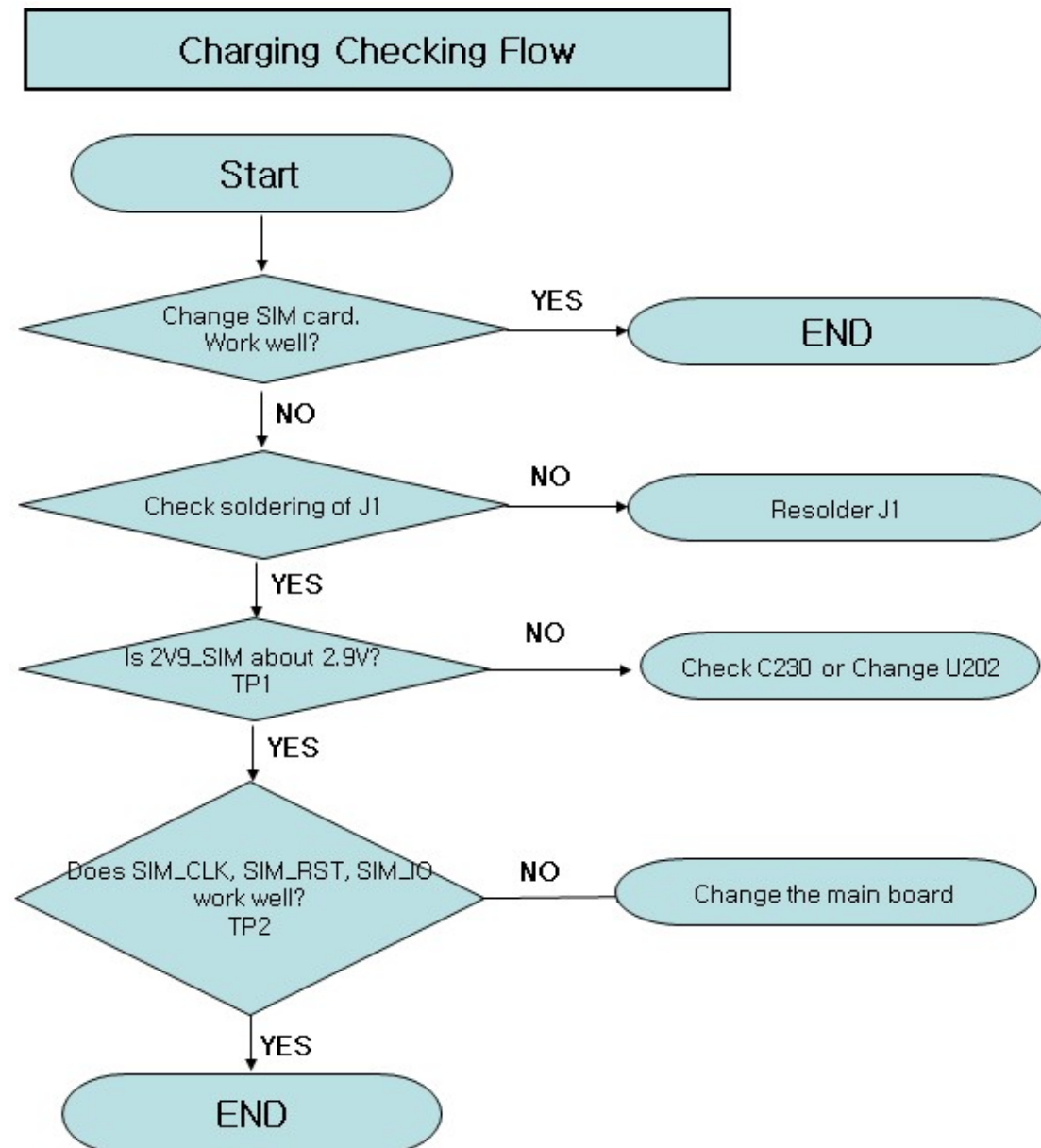


5. Trouble shooting

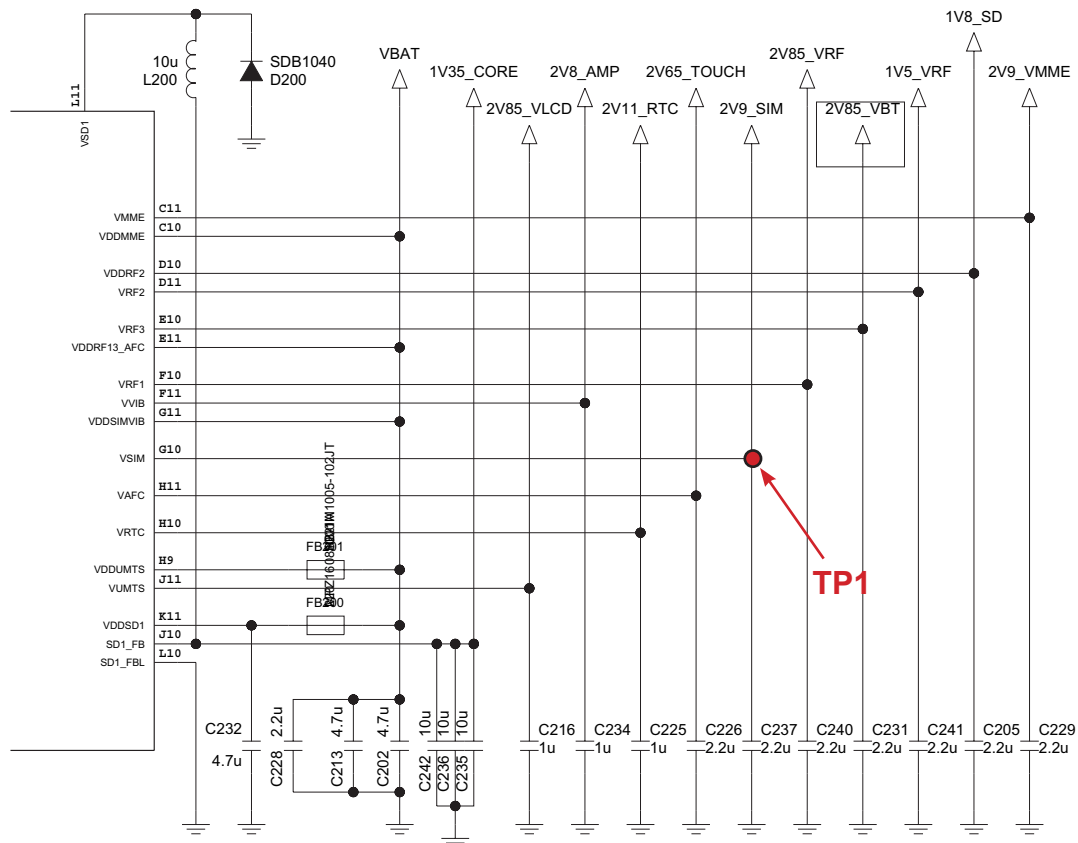
CHARGING IC



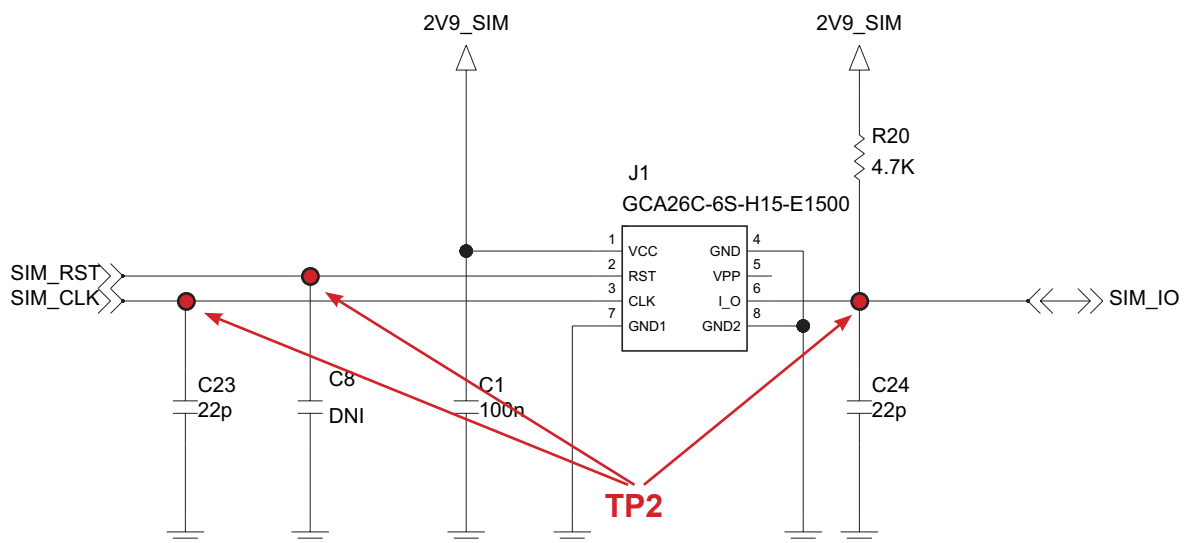
5.4 SIM Detect Trouble

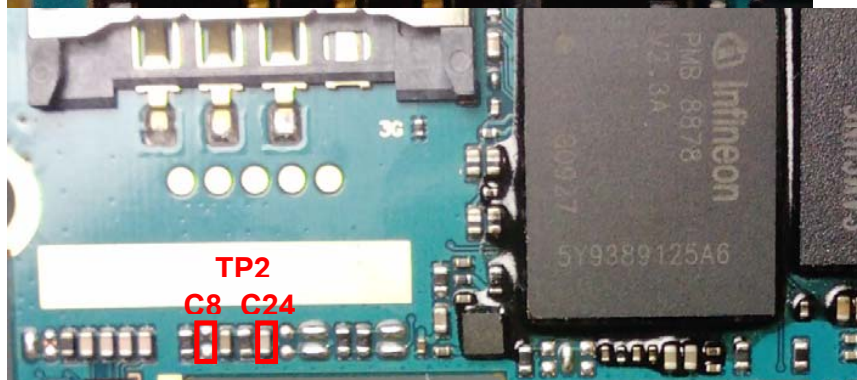
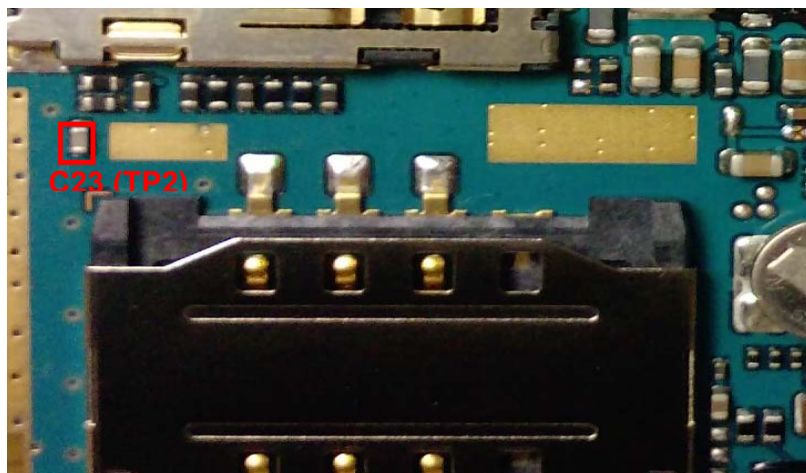
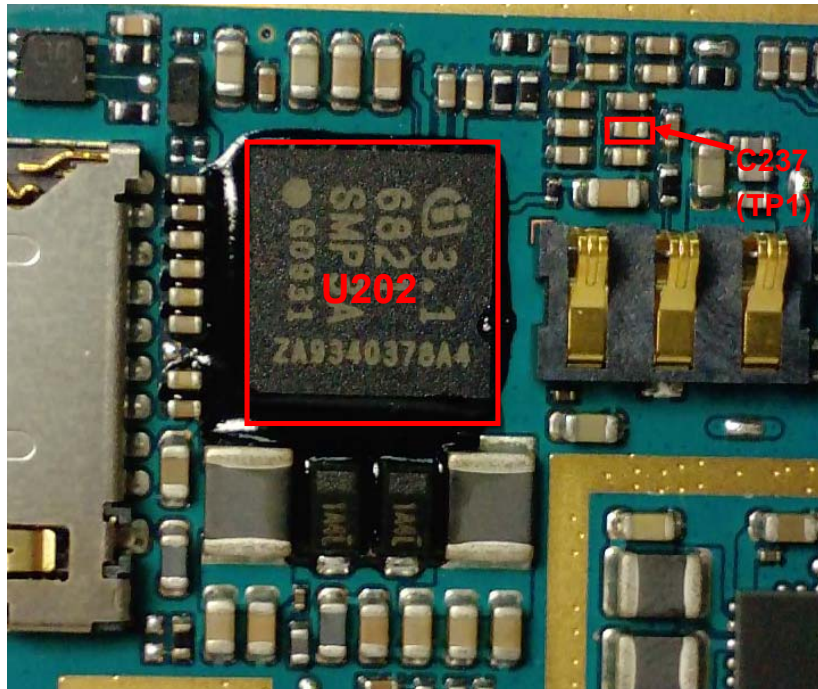


5. Trouble shooting



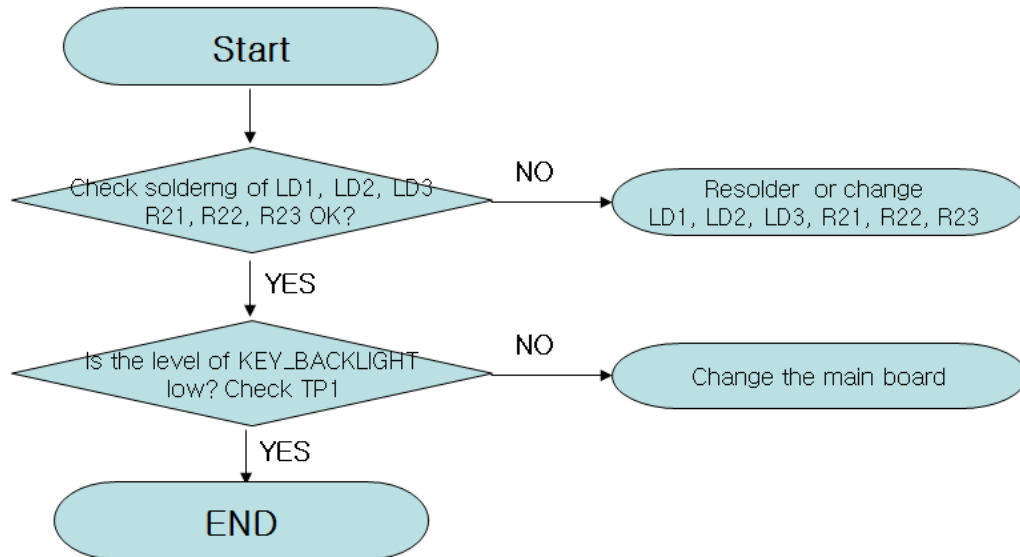
SIM SOCKET



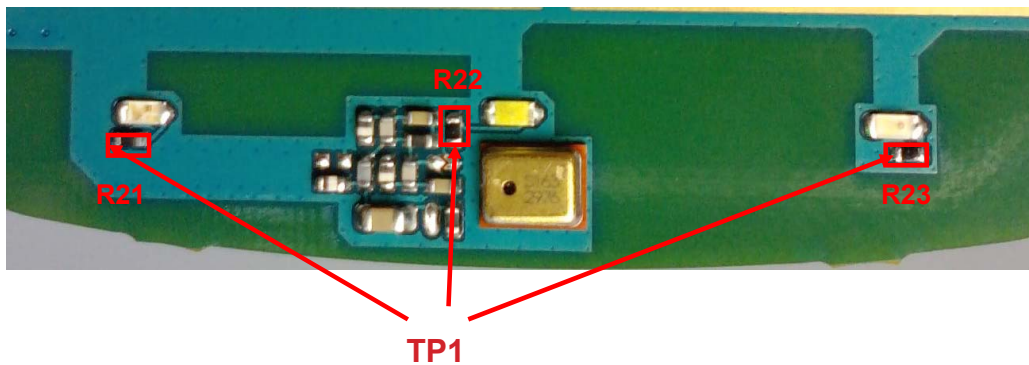
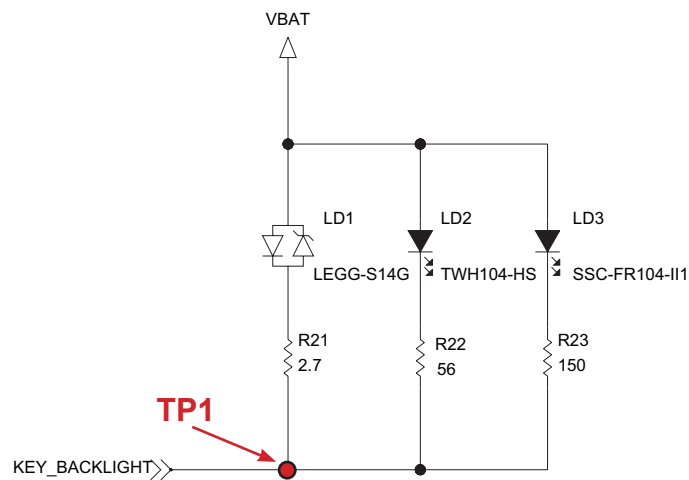


5. Trouble shooting

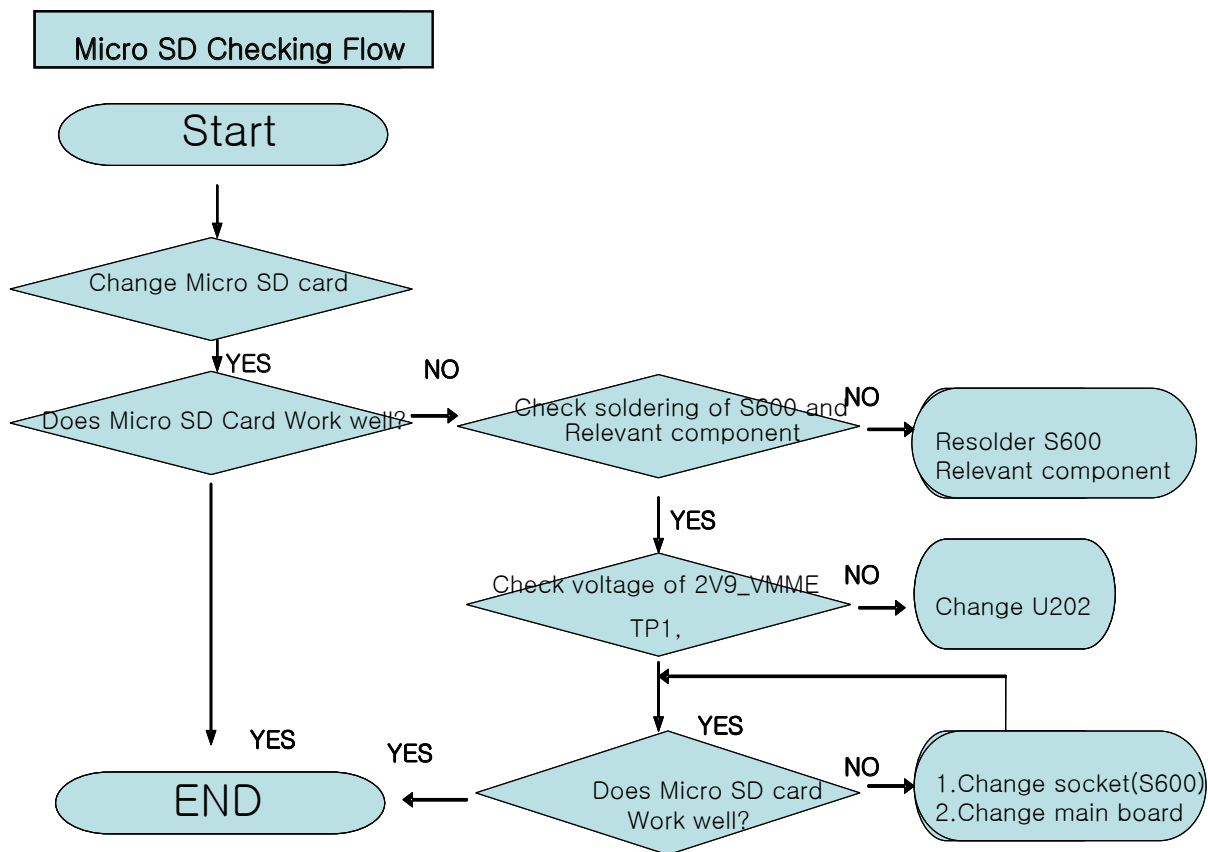
5.5 Three-KEY backlight Trouble



KEY BACKLIGHT

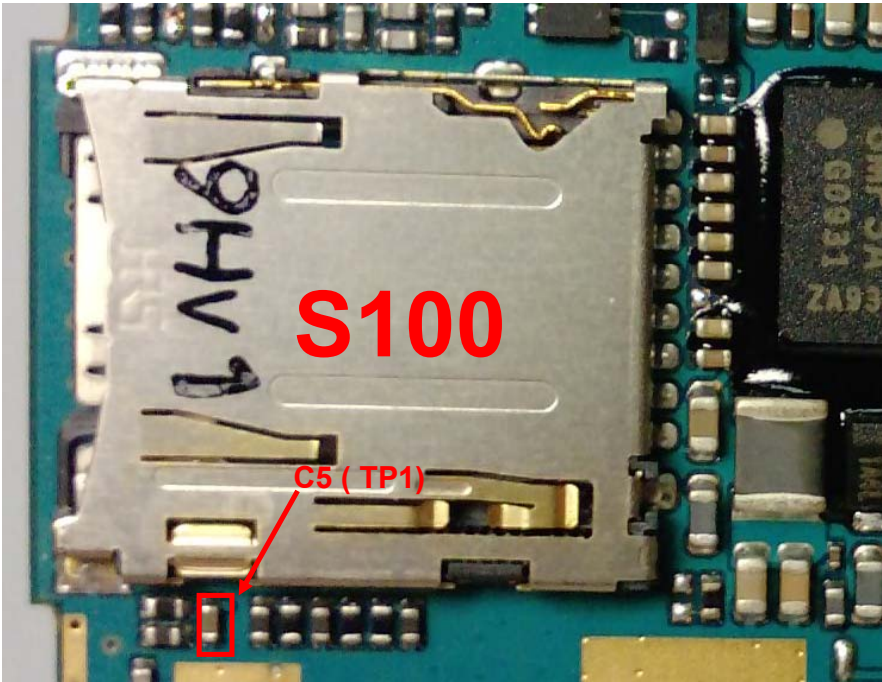
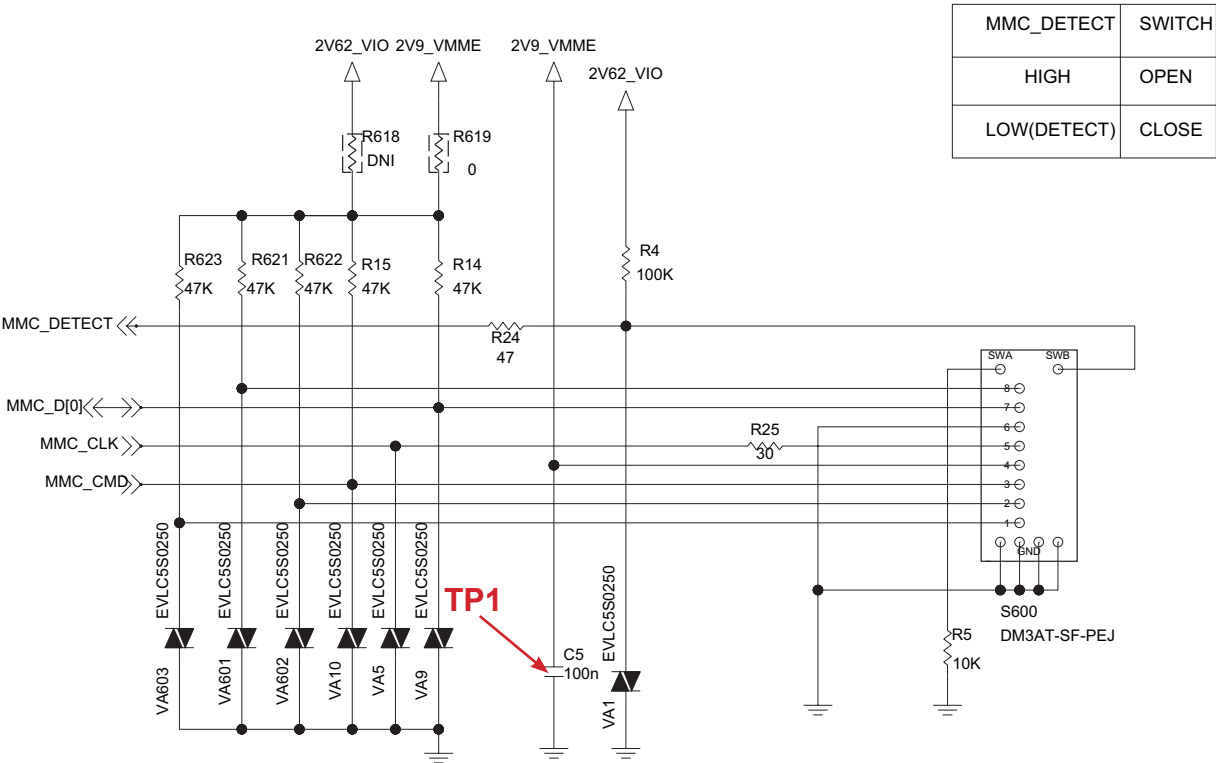


5.6 Micro SD Trouble



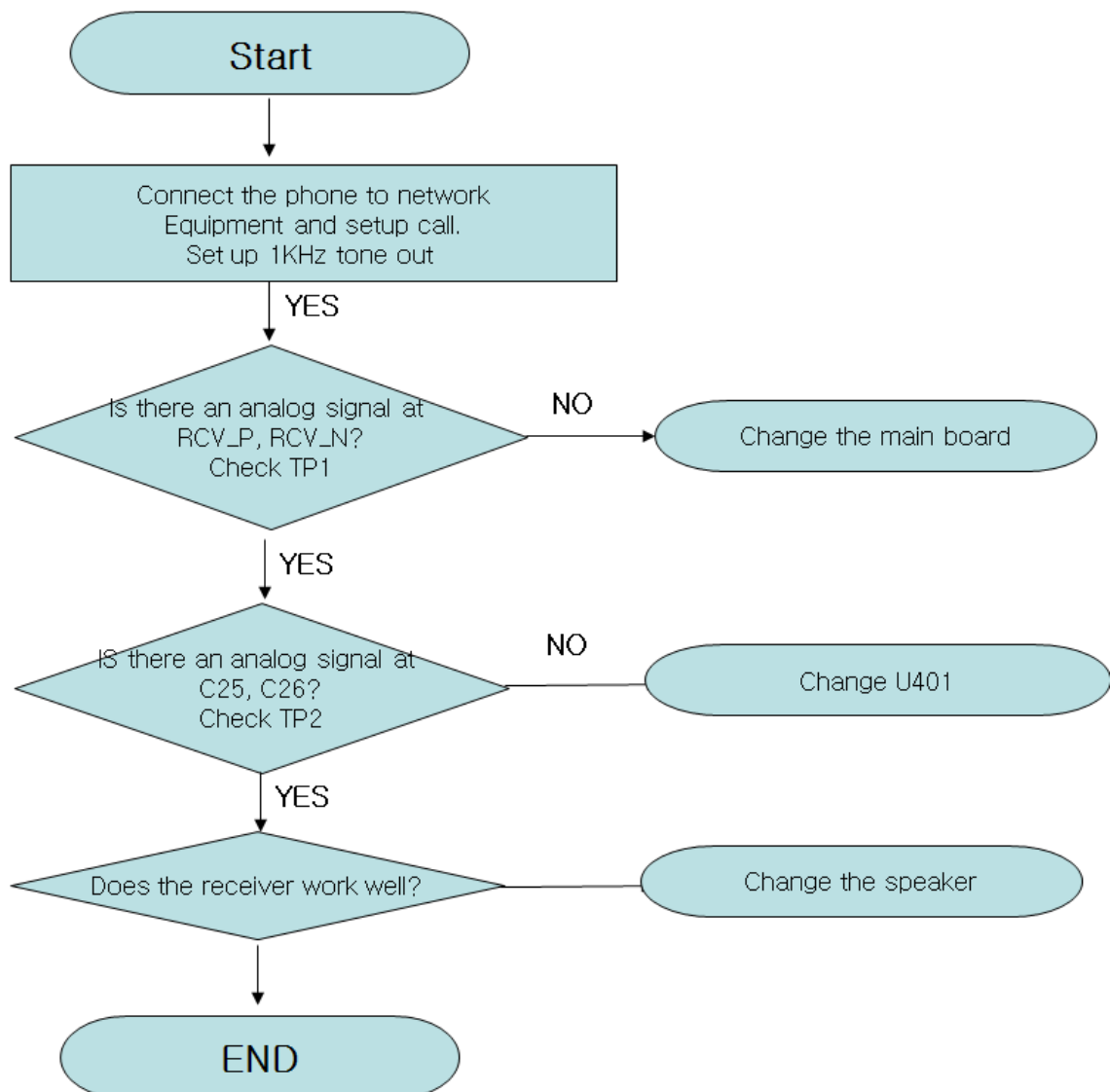
5. Trouble shooting

MICRO SD SOCKET



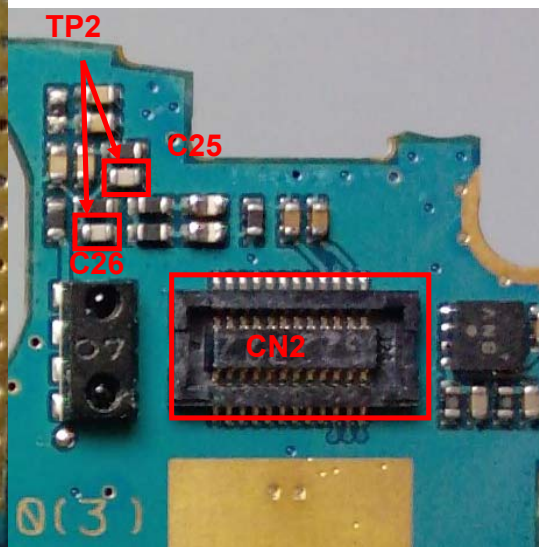
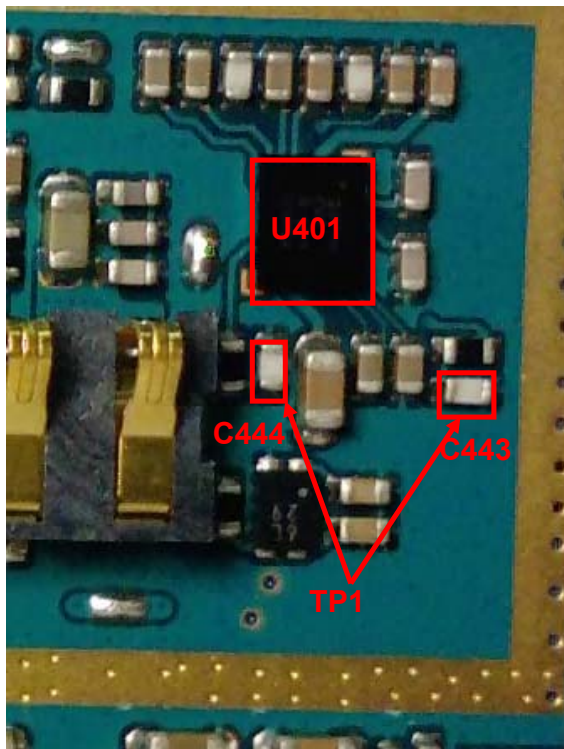
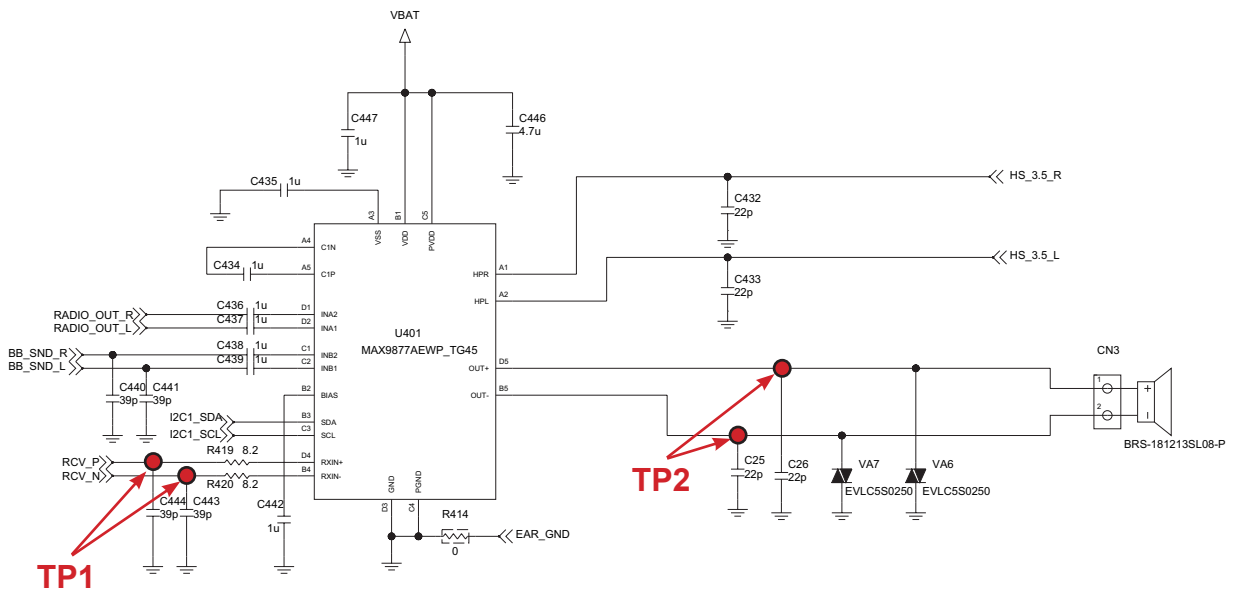
5.7 Audio Trouble

5.7 1 Receiver path

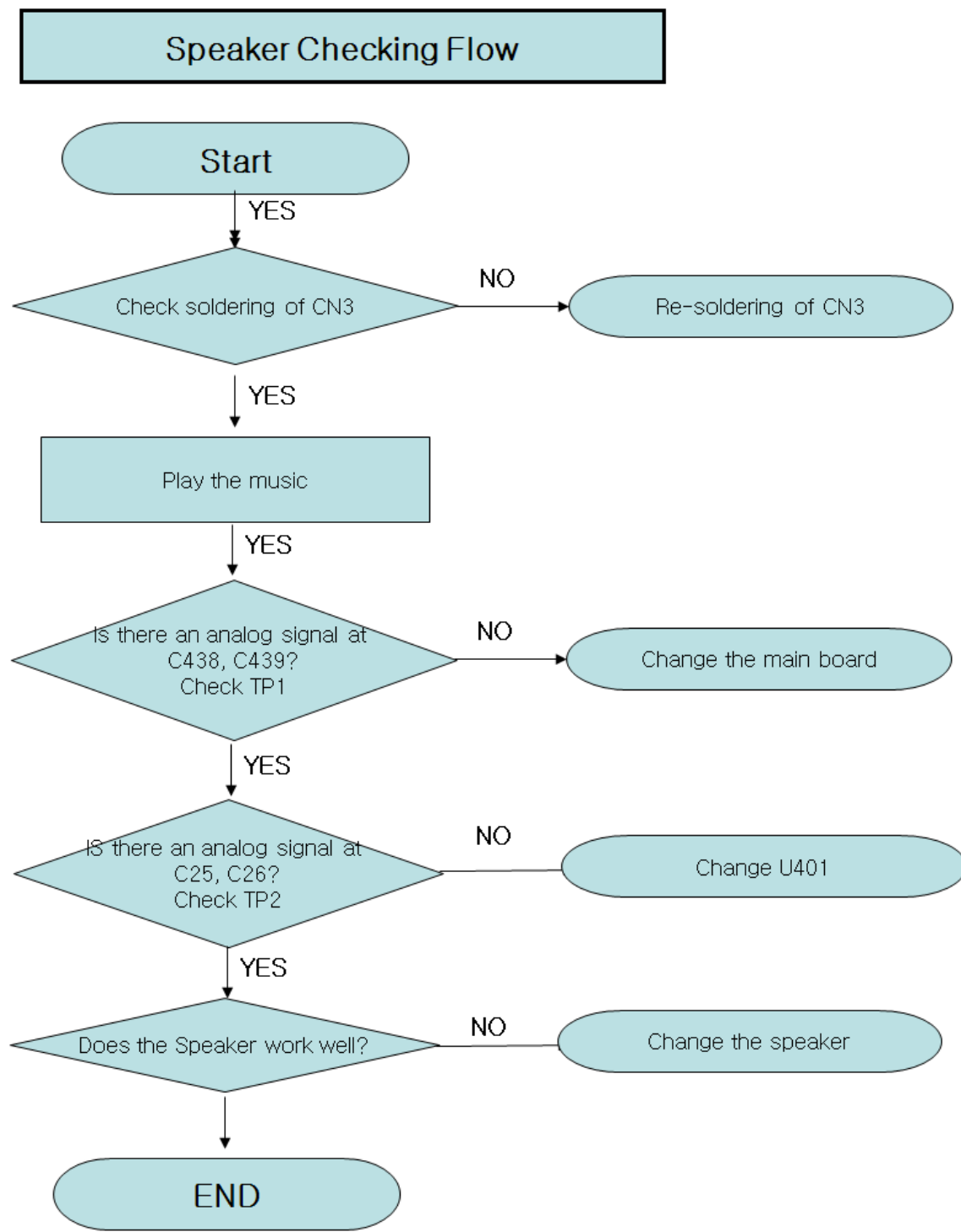


5. Trouble shooting

AUDIO SUB SYSTEM

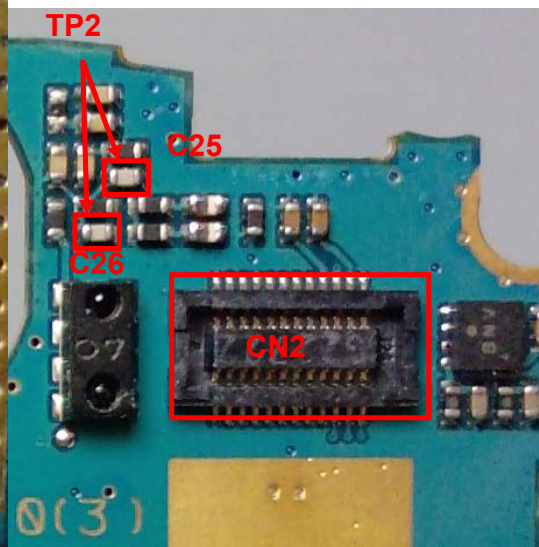
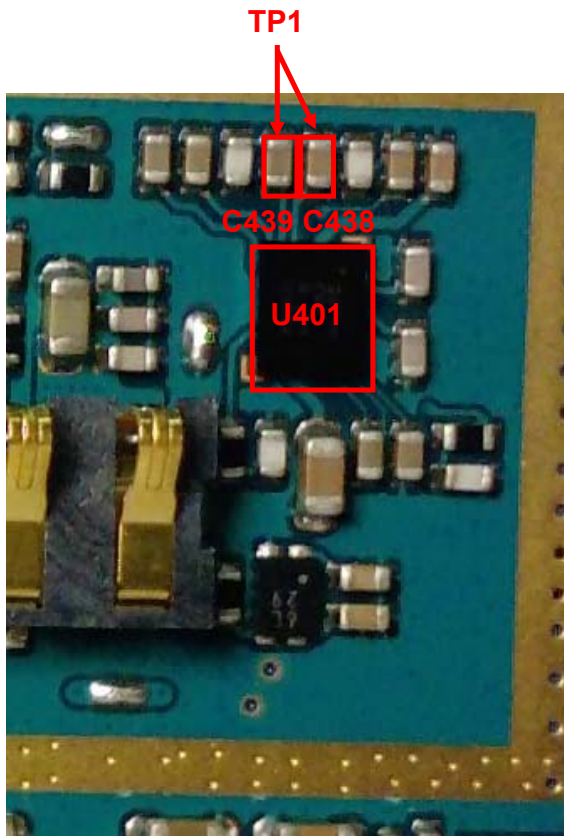
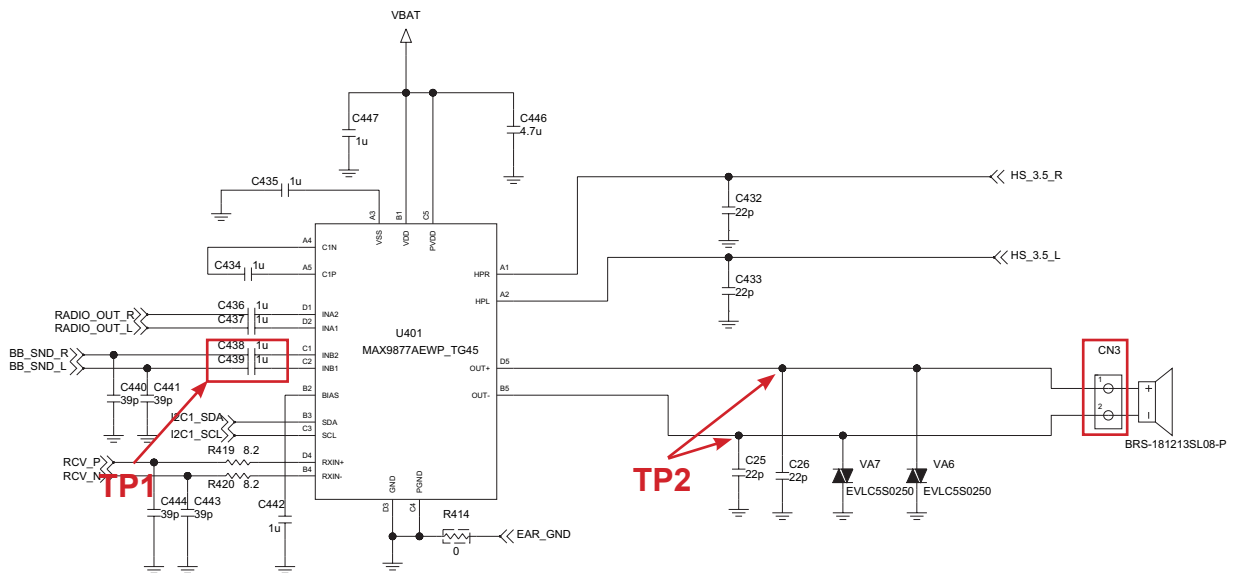


5.7.2 Speaker path

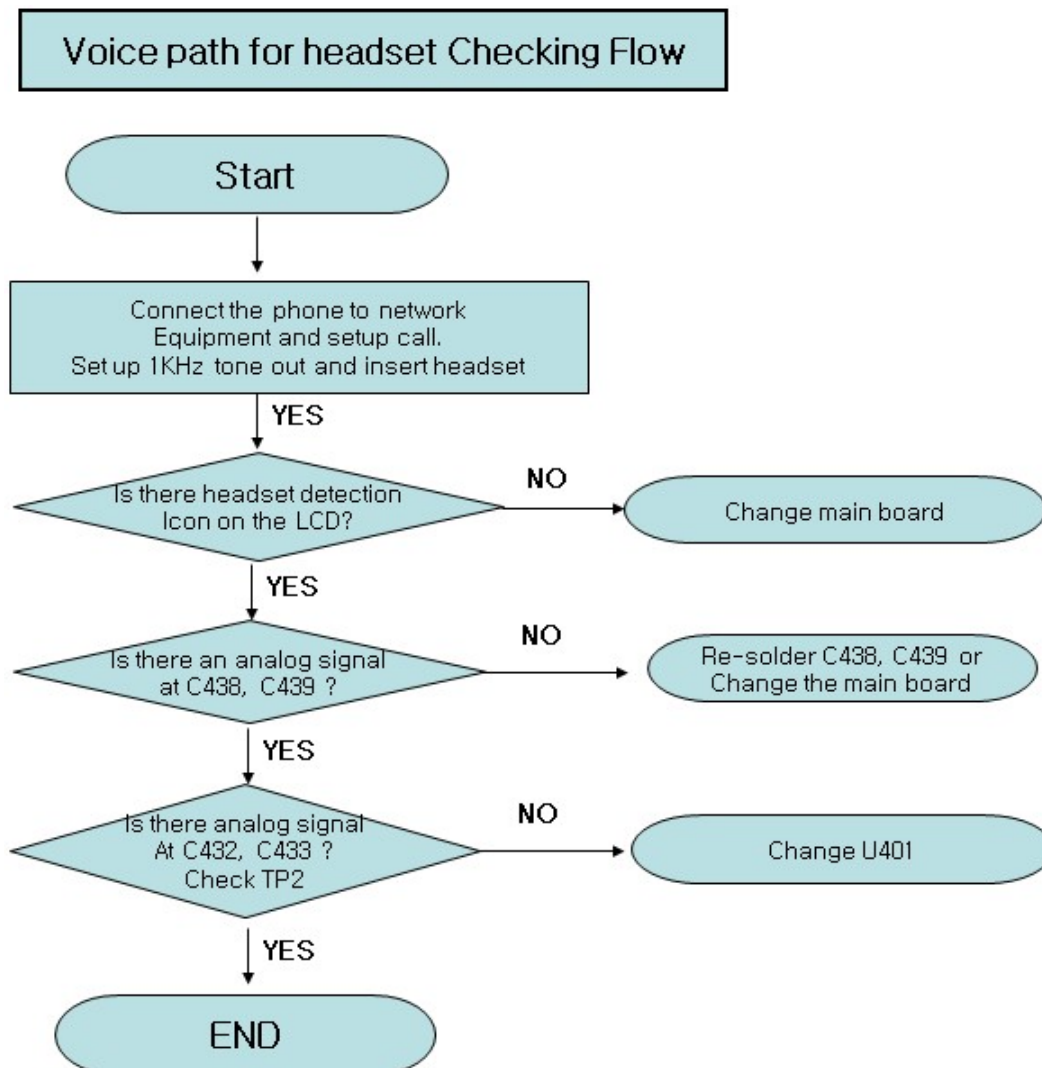


5. Trouble shooting

AUDIO SUB SYSTEM

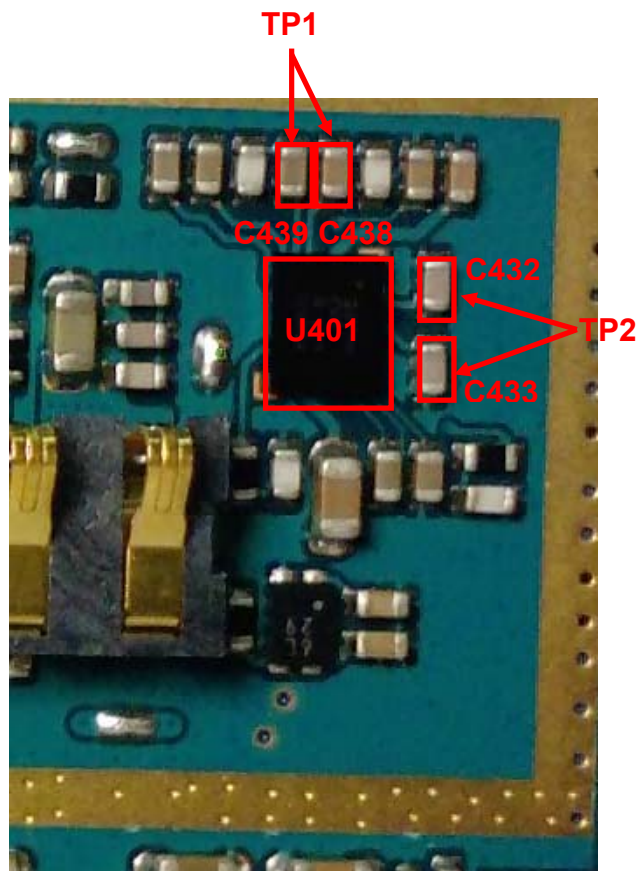
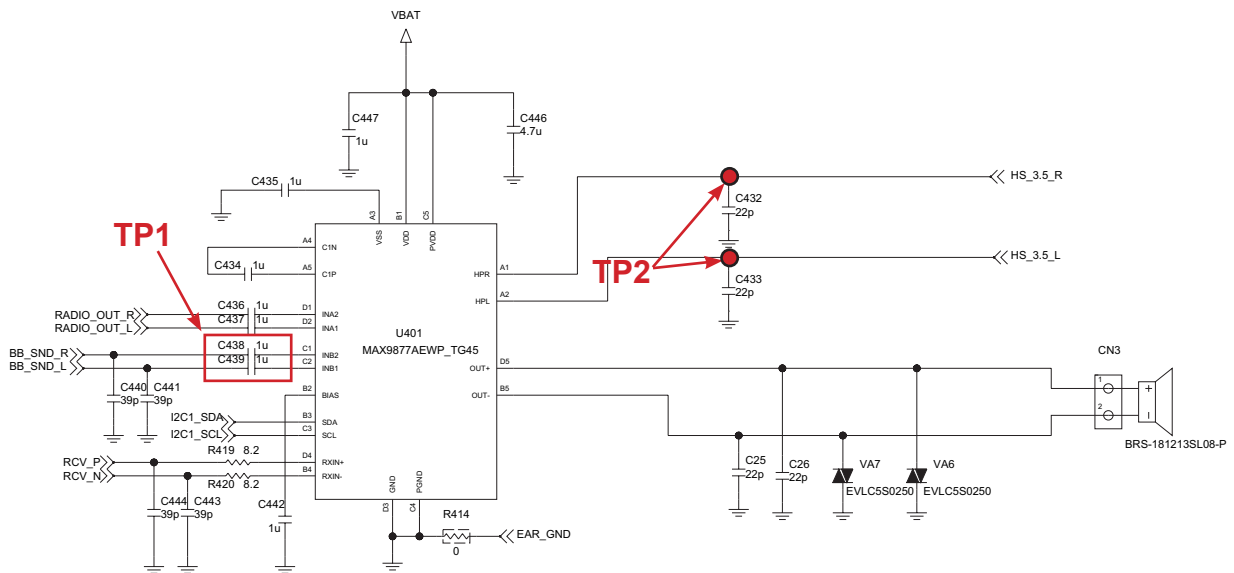


5.7.3 Voice path for headset



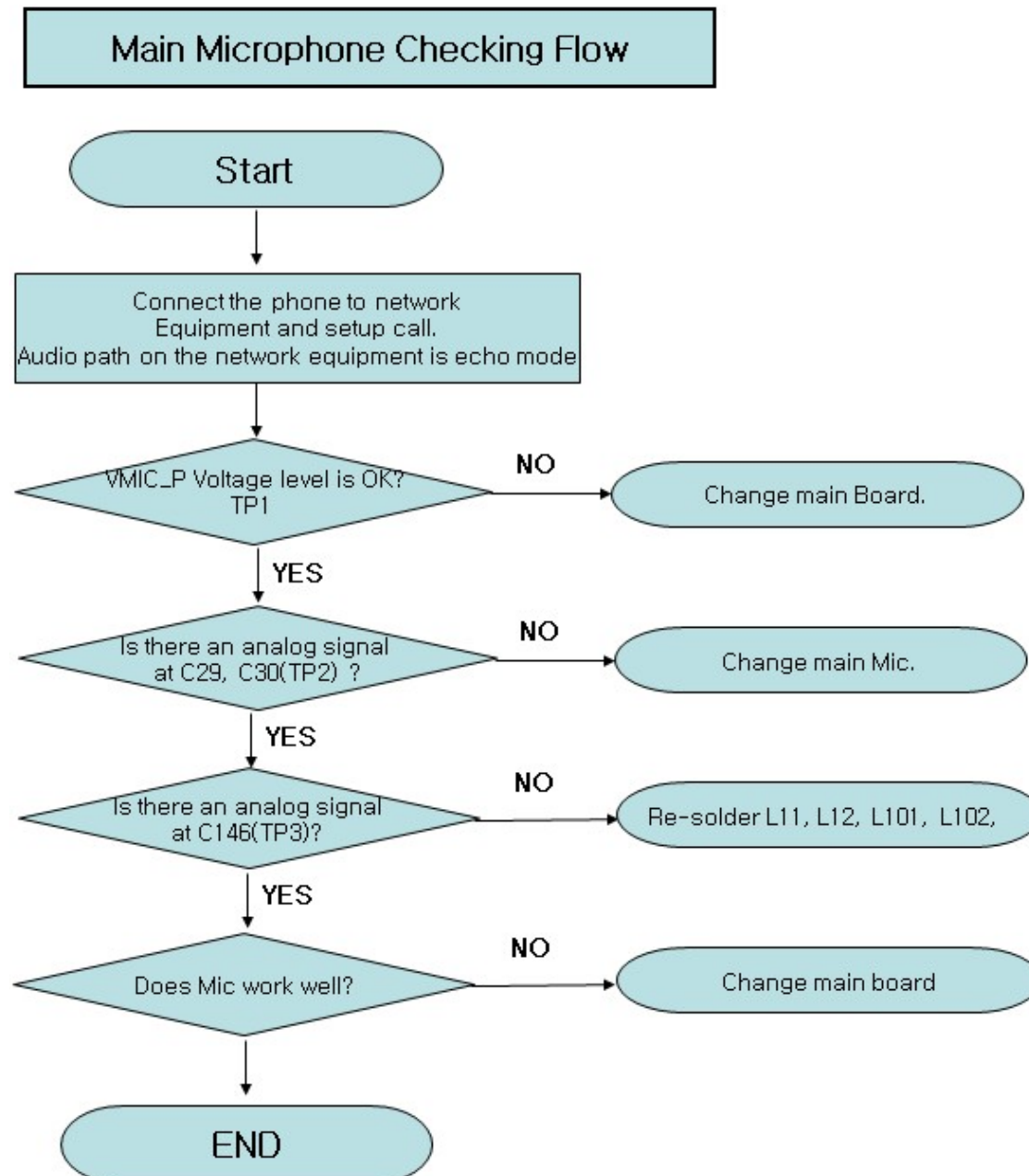
5. Trouble shooting

AUDIO SUB SYSTEM



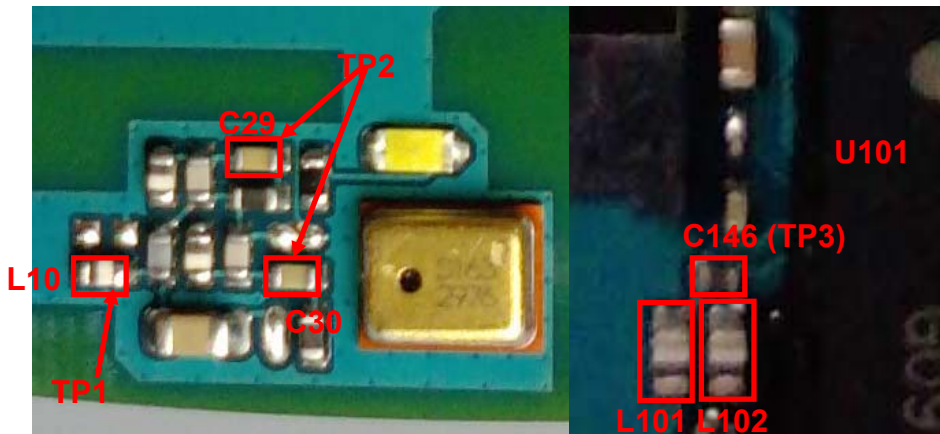
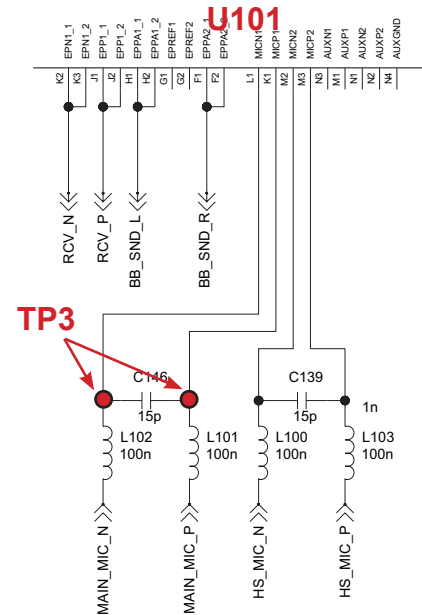
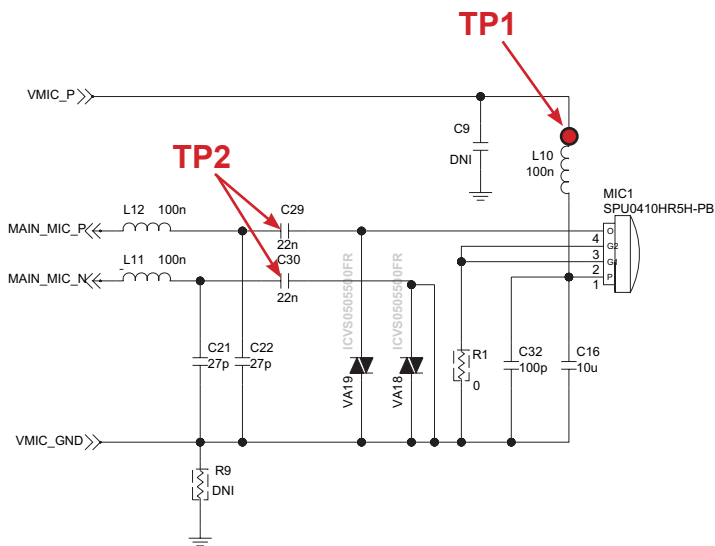
5.8 Microphone Trouble

5.8 1 Microphone for main MIC

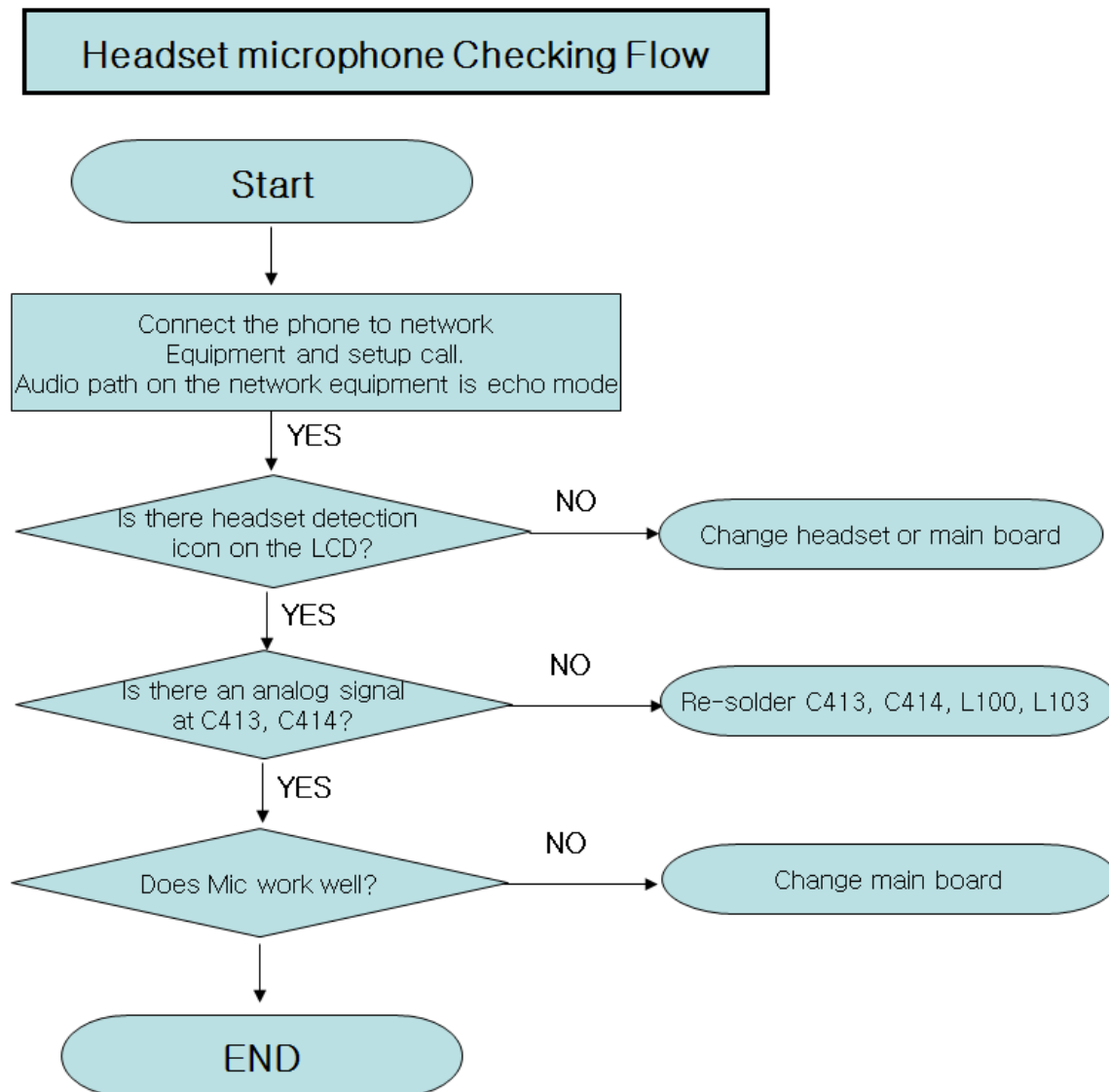


5. Trouble shooting

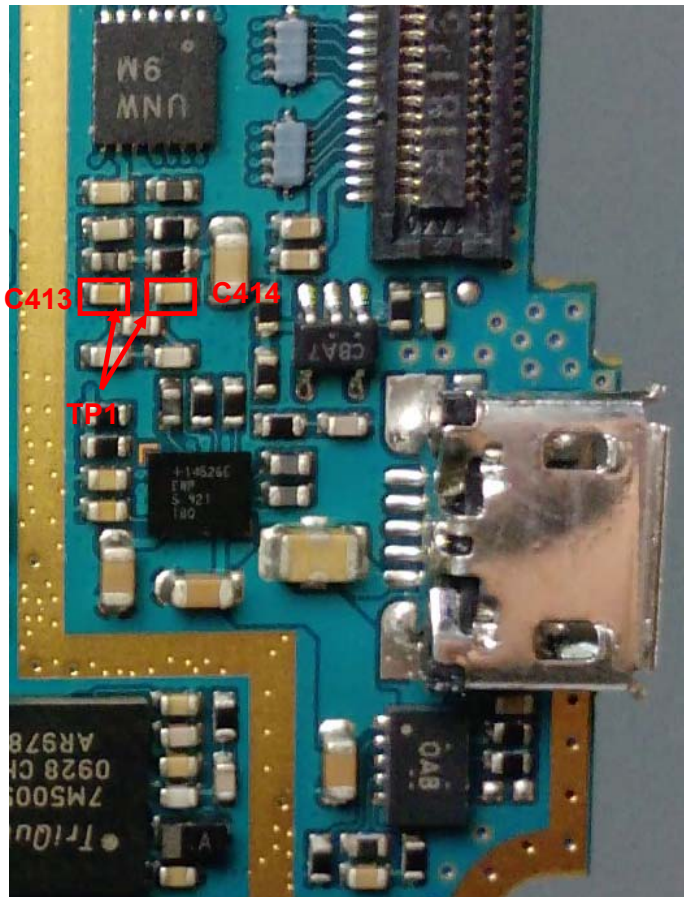
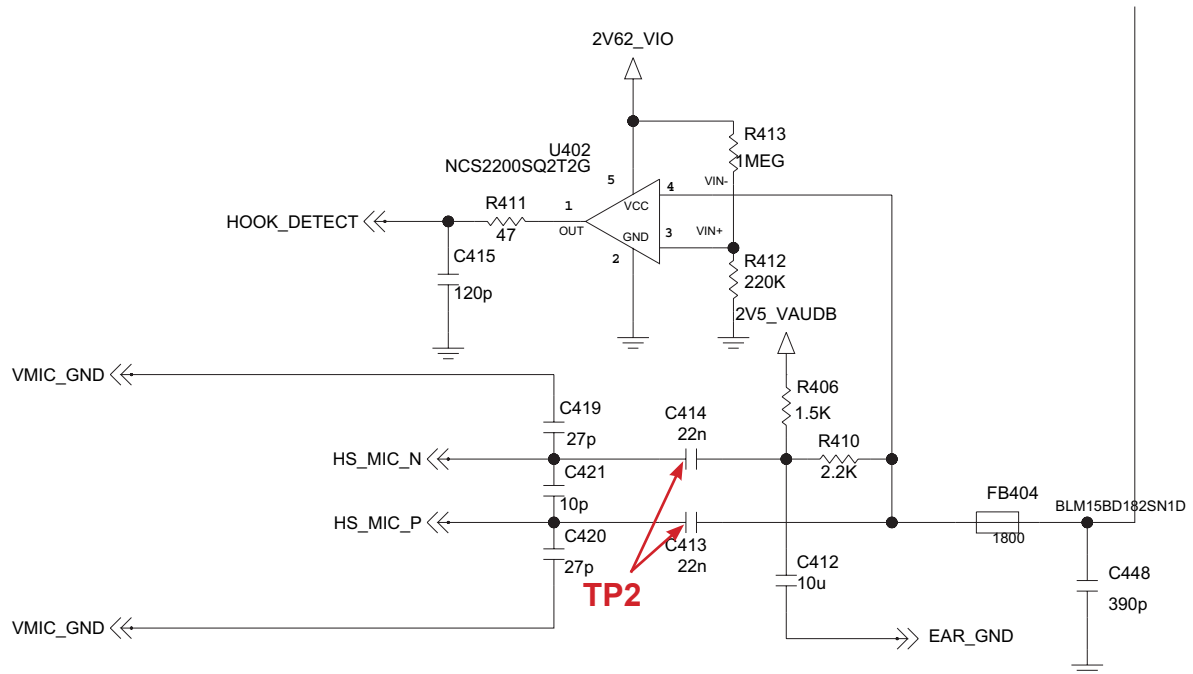
MICROPHONE



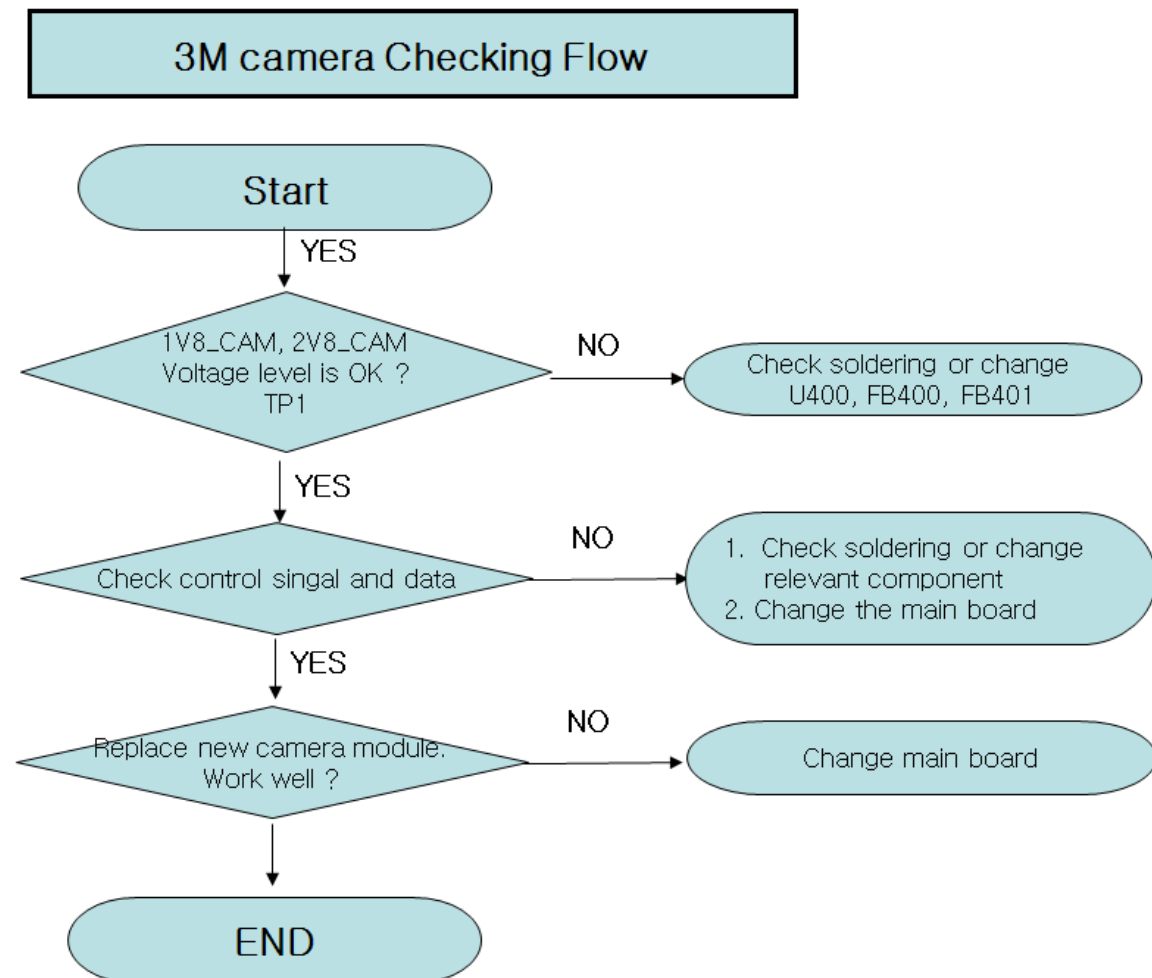
5.8.2 Microphone for headset



5. Trouble shooting

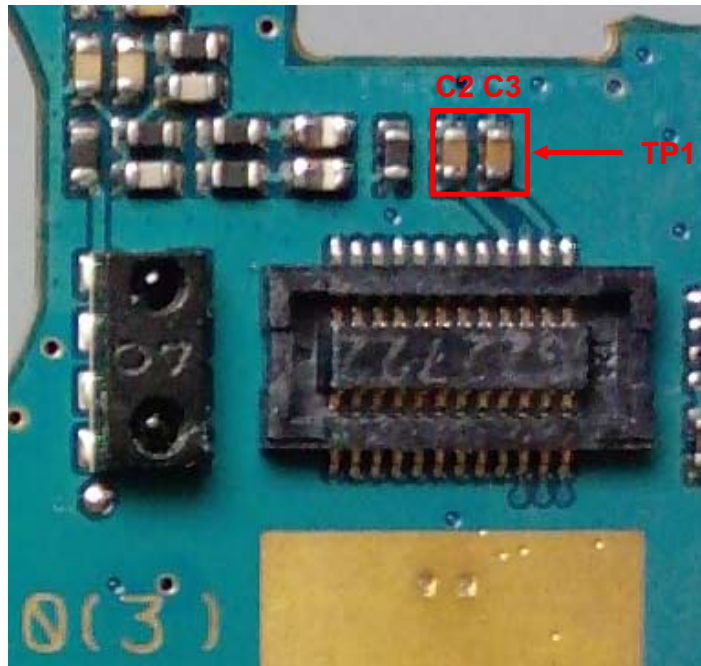
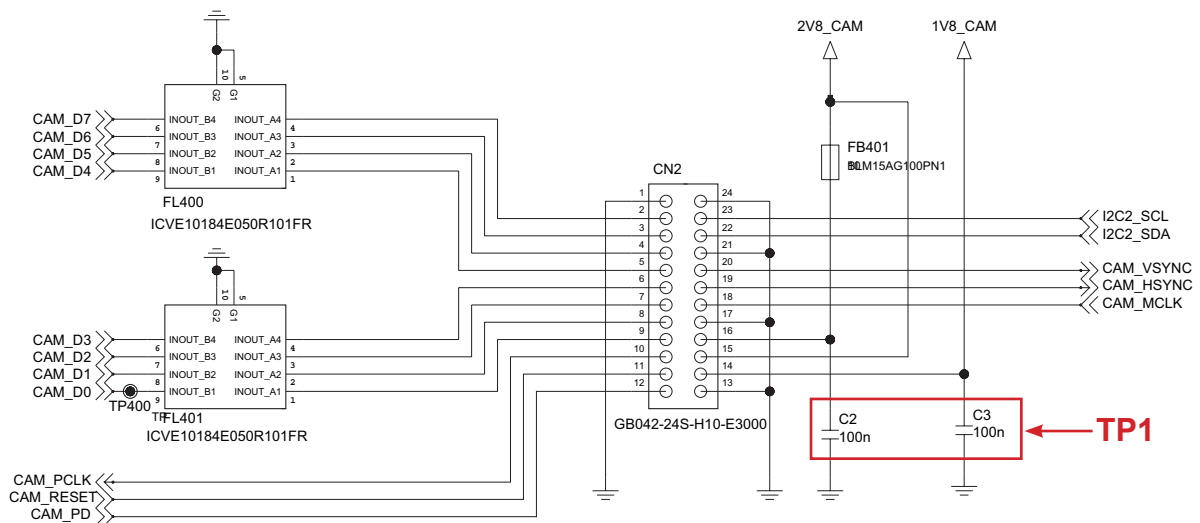


5.9 3M Camera Trouble

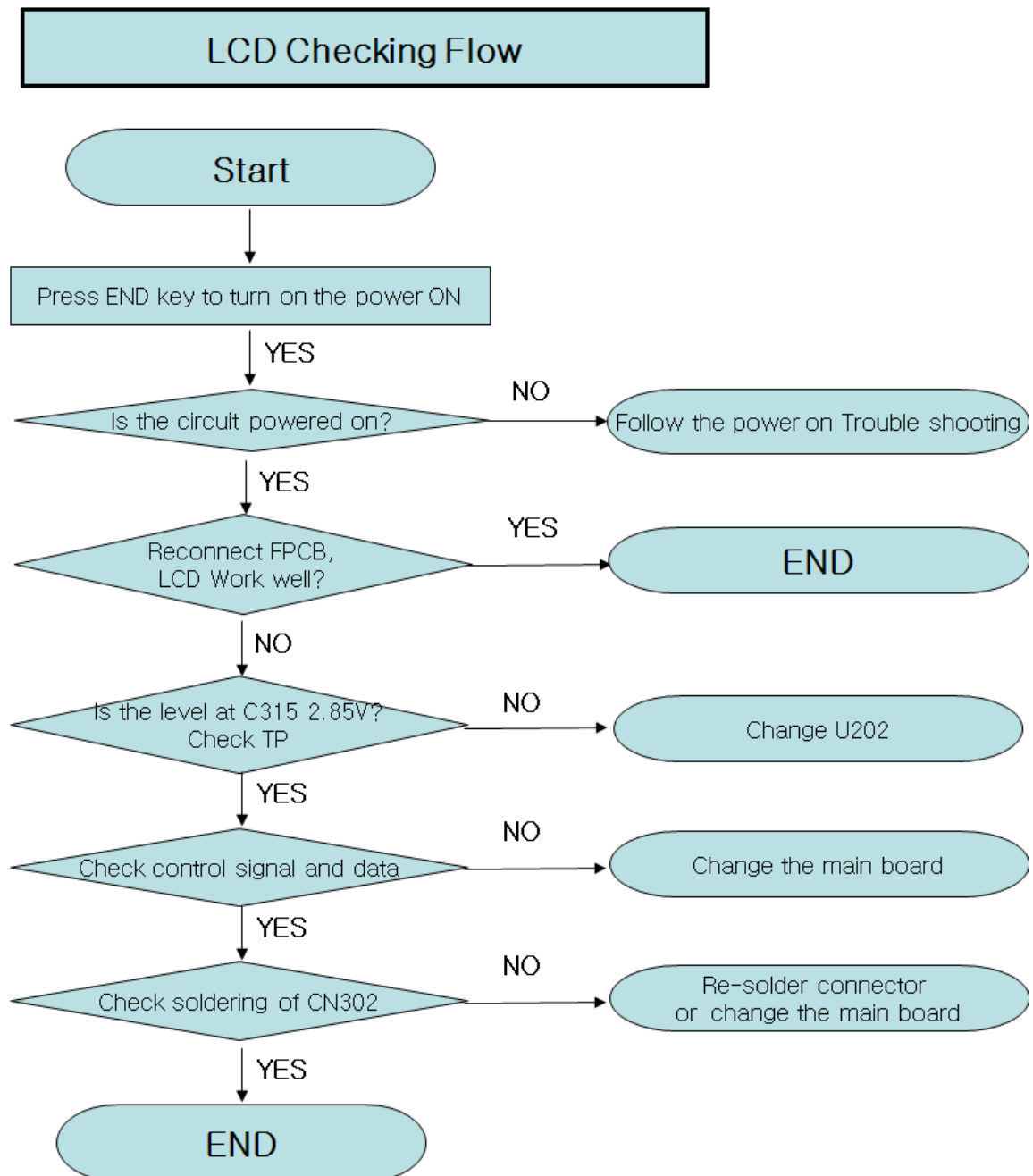


5. Trouble shooting

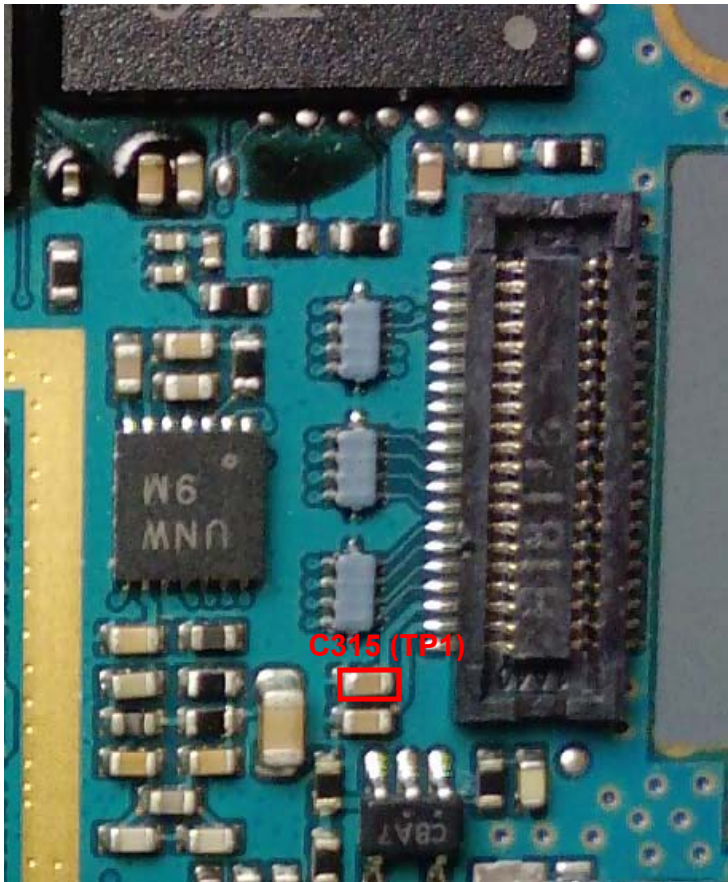
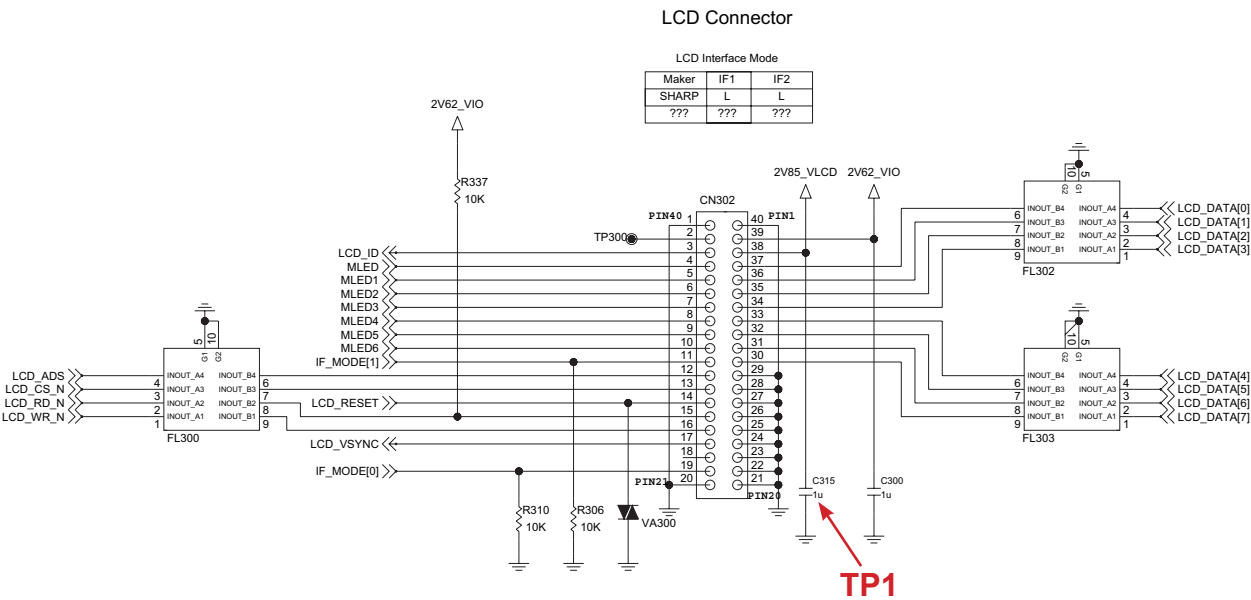
3M FF CAMERA



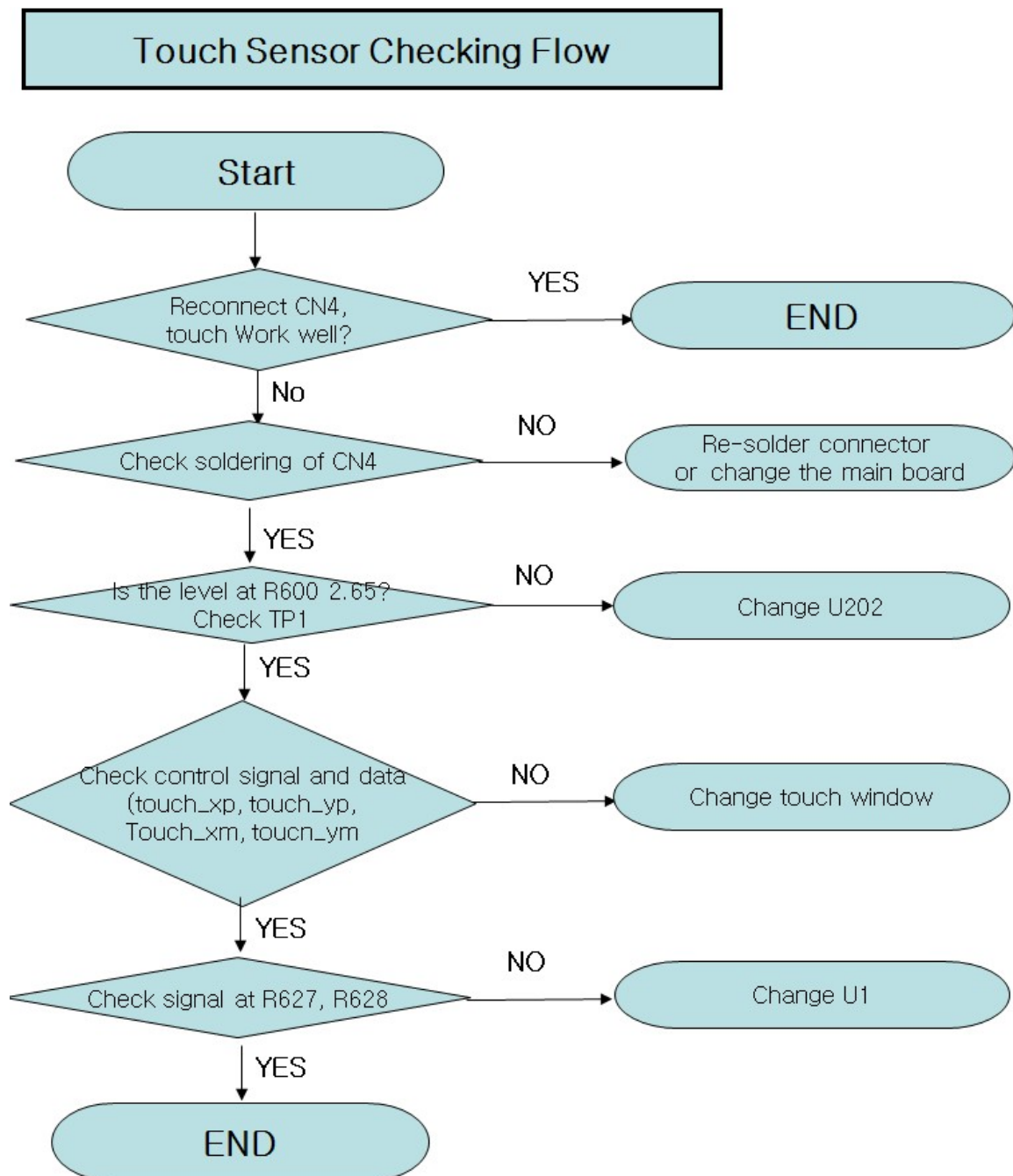
5.10 Main LCD Trouble



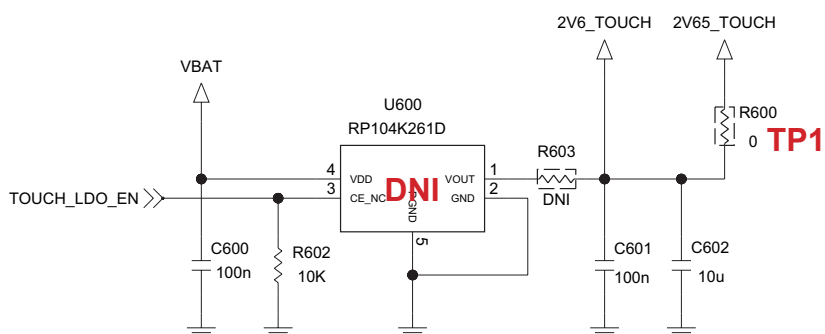
5. Trouble shooting



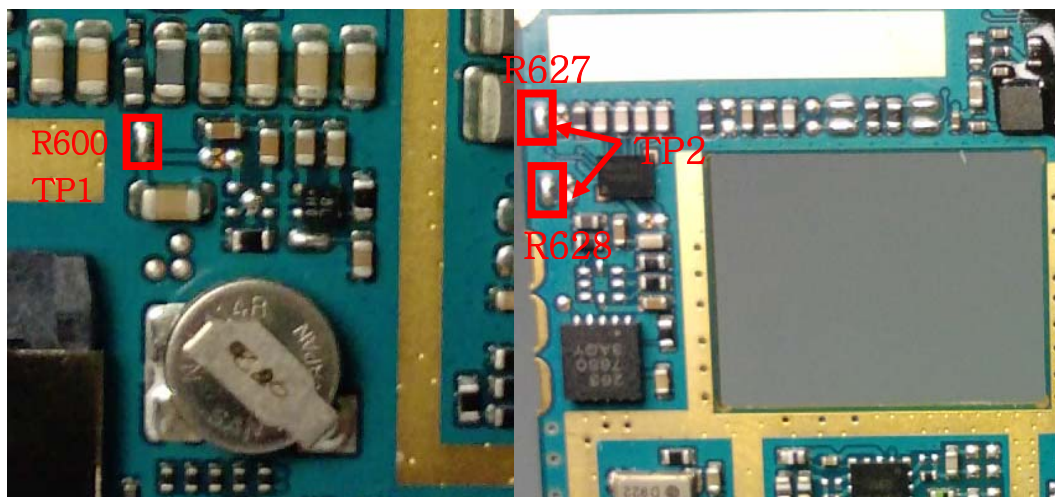
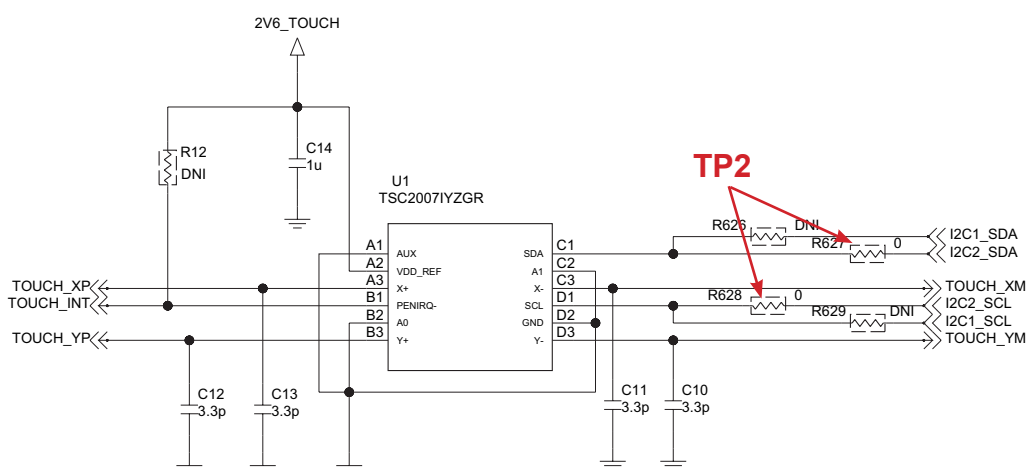
5.11 Touch Sensor



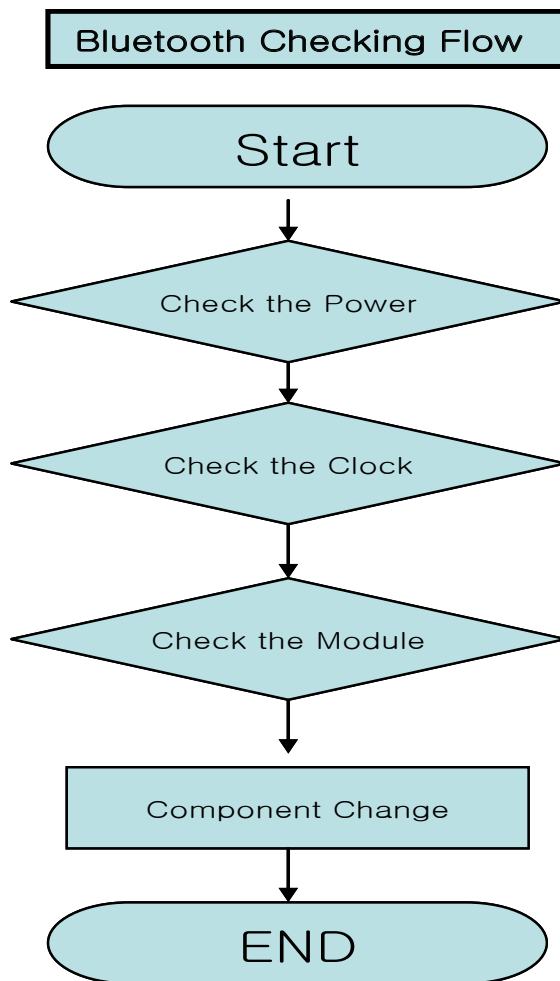
TOUCH LDO



TOUCH IC

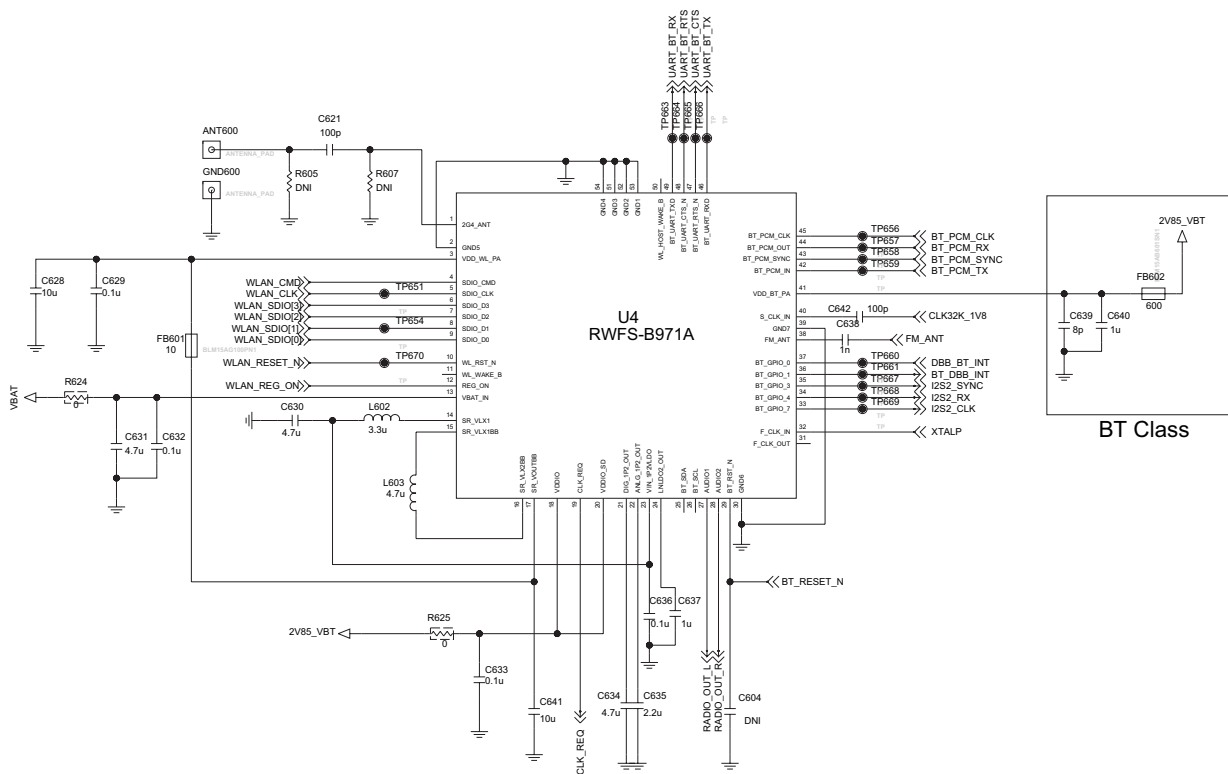


5.12 WiFi /Bluetooth Trouble



5.12.1 Module Part

BT, FM radio Rx, WiFi

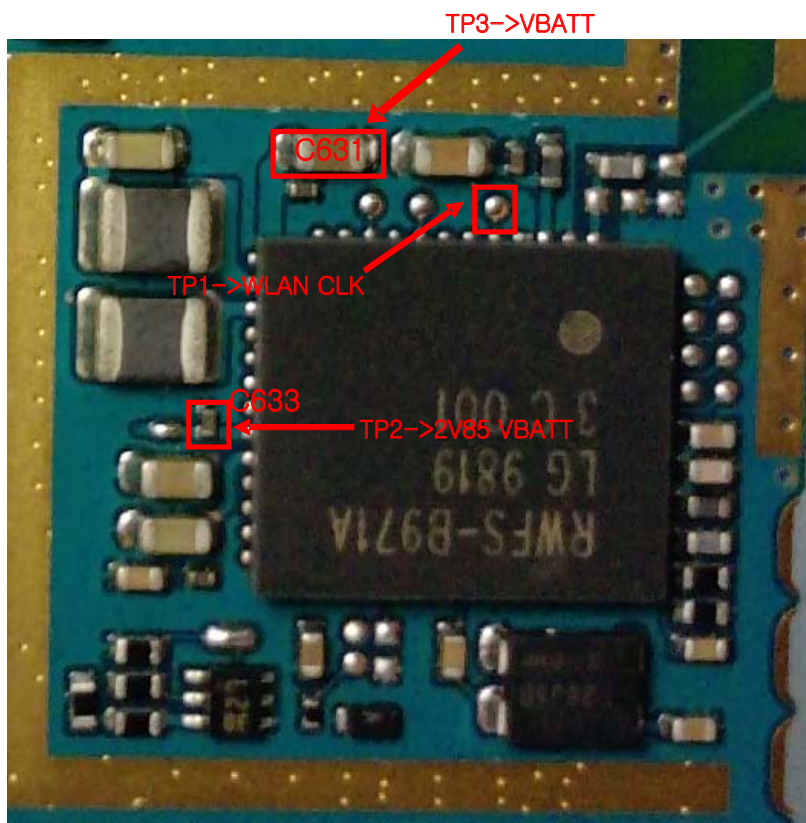
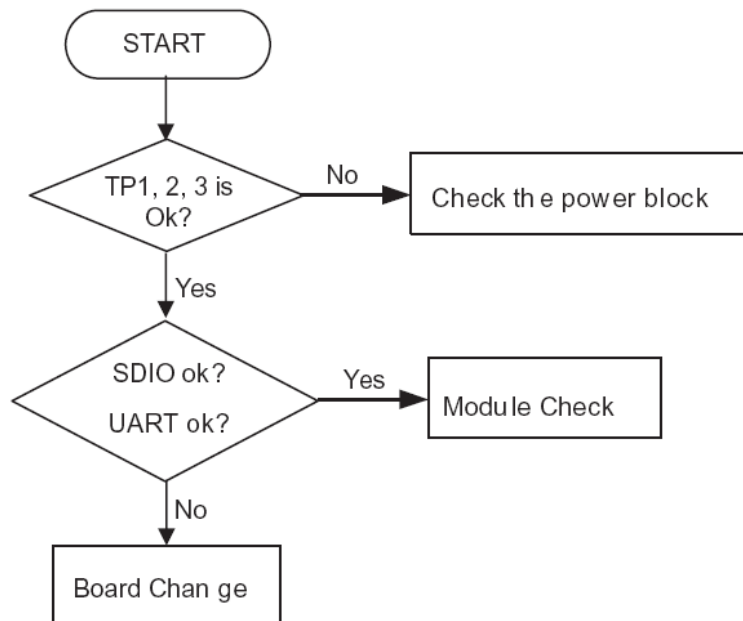


[Figure5.12-1] Schematic of WiFi/BT/FM module

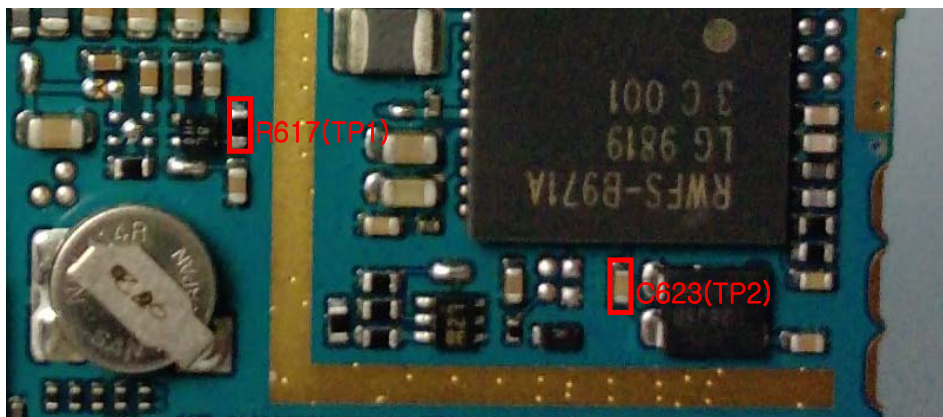
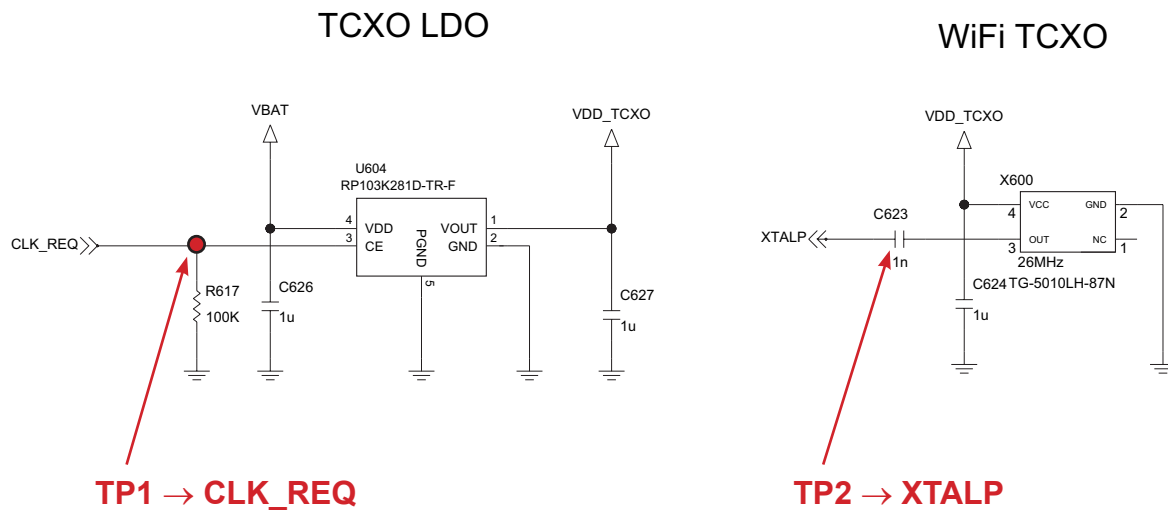
Test Point Description

Test Point	Net name	Description
TP1	VDD3_3	Power for i nternal PA and RF interfaces (3.3V)
TP2	VDD1_2	Power for WLAN/BT/F M BB co re and AFE/PLL(1.2V)
TP3	VREG_MSMP_ 2.7V	Power for h ost interface (2.7V)

Checking Flow



5. Trouble shooting



Test Point	Net name	Description
TP1	CLK_REQ	On/Off Control external clock source 0 : TCXO off 1 : TCXO on
TP2	XTALP	TCXO output clock : 26MHz

Test Point of TCXO



TC- 3000B (Bluetooth Tester)

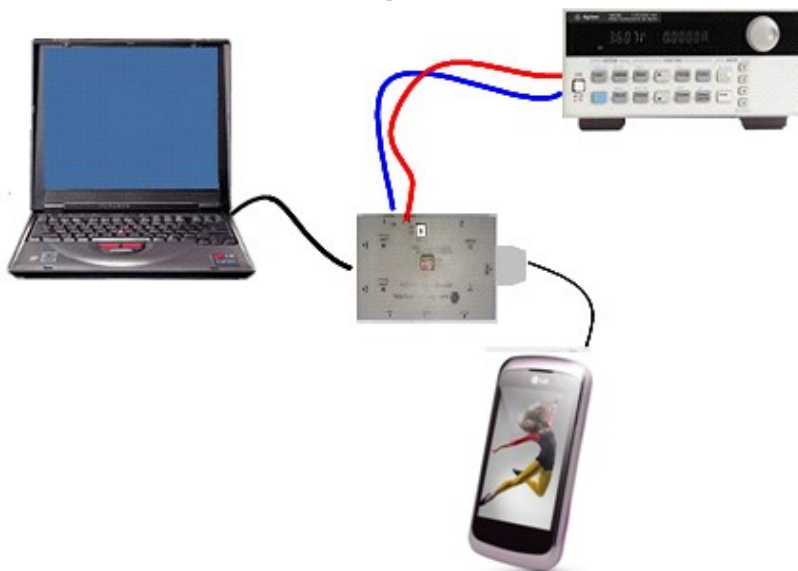
◆ Bluetooth RF Test procedure

1. Set phone to Bluetooth test-mode.
 - Blue tooth ON : Enter Test Mode(1809#*555#) → Eng Mode → BT Testing → RF Test
2. Insert a phone in a TEMCELL (in case of radiation test)
3. Set 'discover' after push menu button of the tester and select the link analyzer .
4. After 'set test mode', confirm the connection state.
5. Measure the power of full channel after hopping mode is selected to 'ON'
6. You can select wanted test cases after getting an optimized power
7. Blue tooth Off
 - Menu(OK key)→setting→4)Connectivity→1)Bluetooth→1)Turn on/Turn off

6. Download & S/W upgrade

6. Download & S/W upgrade

6.1 S/W download setup



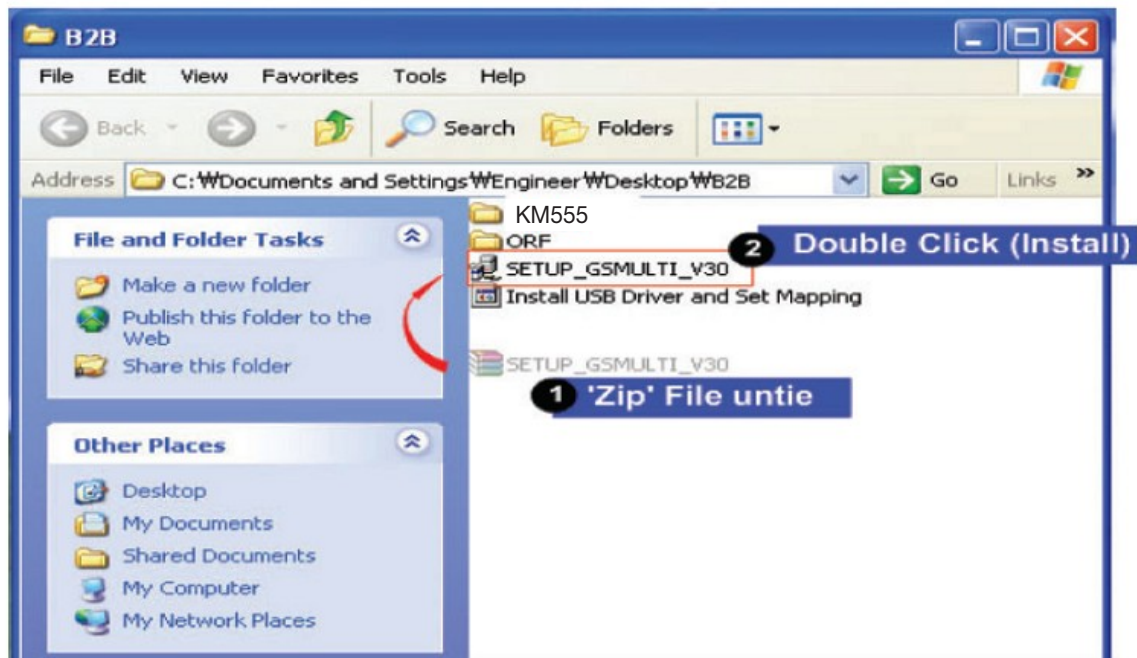
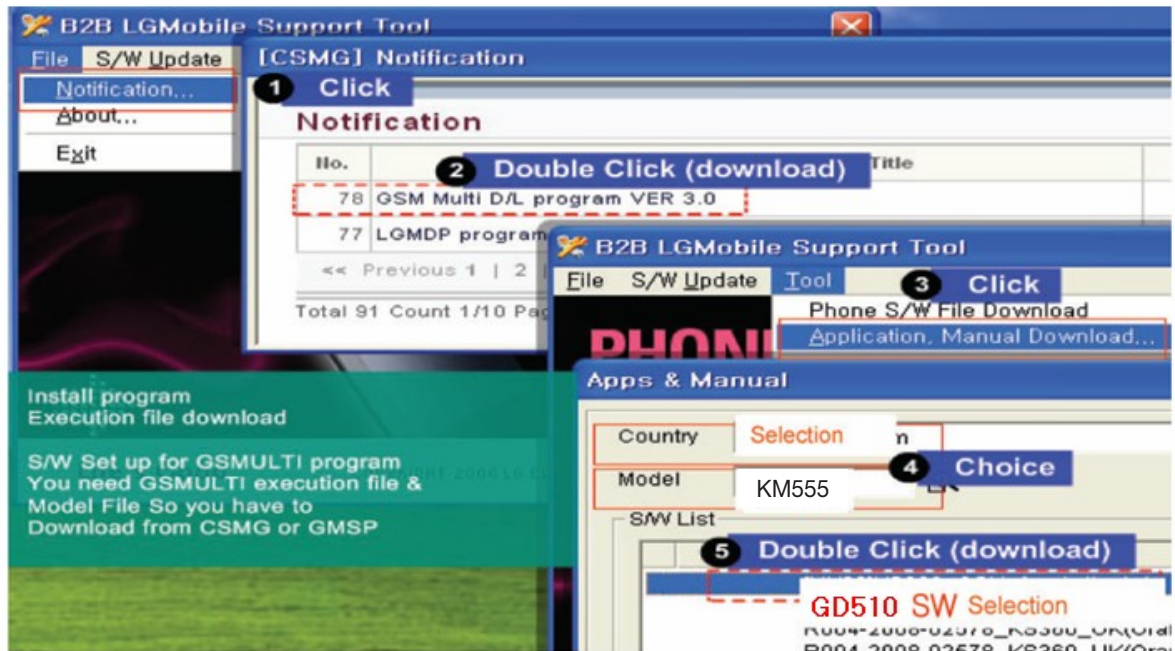
[Figure6.1] S/W download & upgrade setup

Preparation

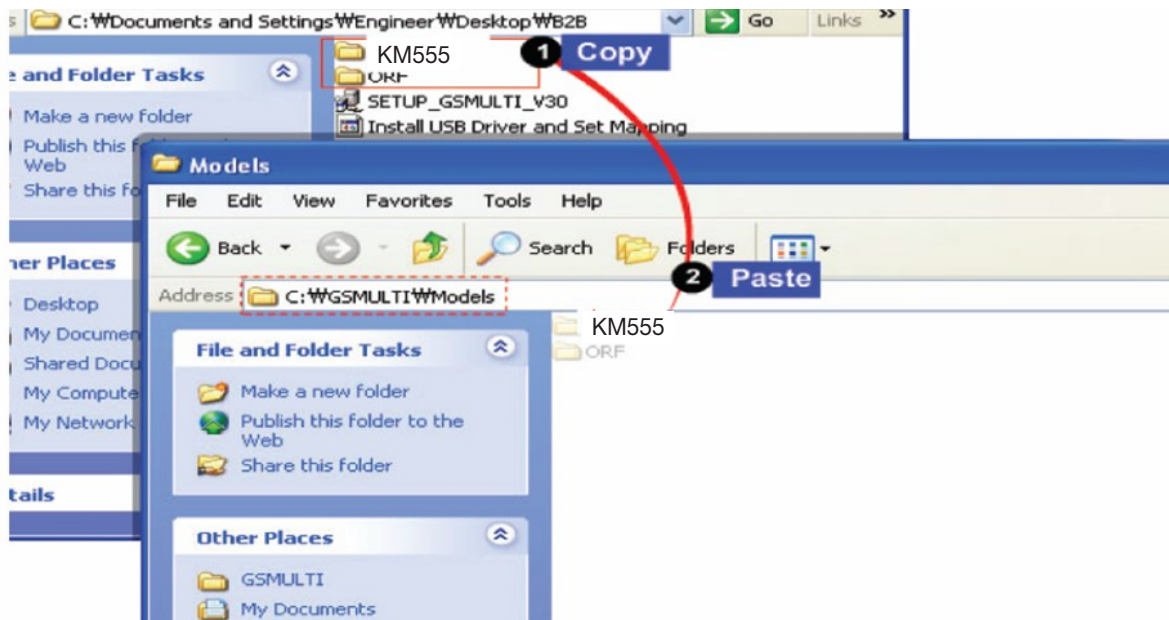
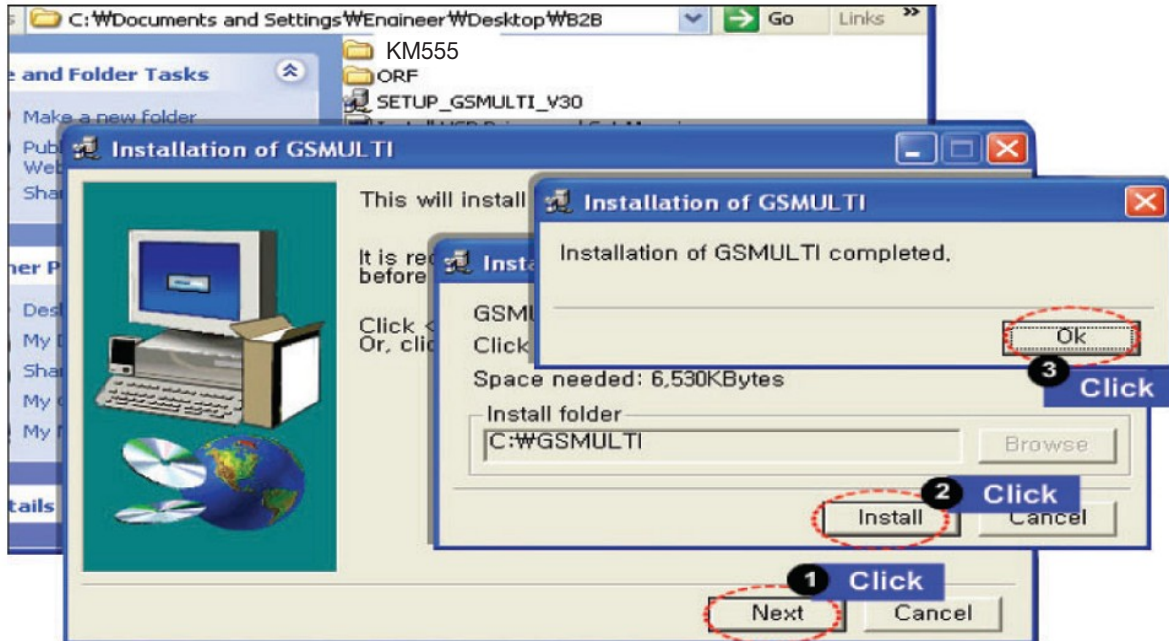
- Target terminal
- PIF-Union
- RS-232 Cable and PIF-UNION to Phone interface Cable
- Power Supply or Battery
- PC supporting RS-232 with Windows 2000 or newer.

If you are going to use battery, the voltage of the battery should be over 3.7V for stable power supplying during S/W download.

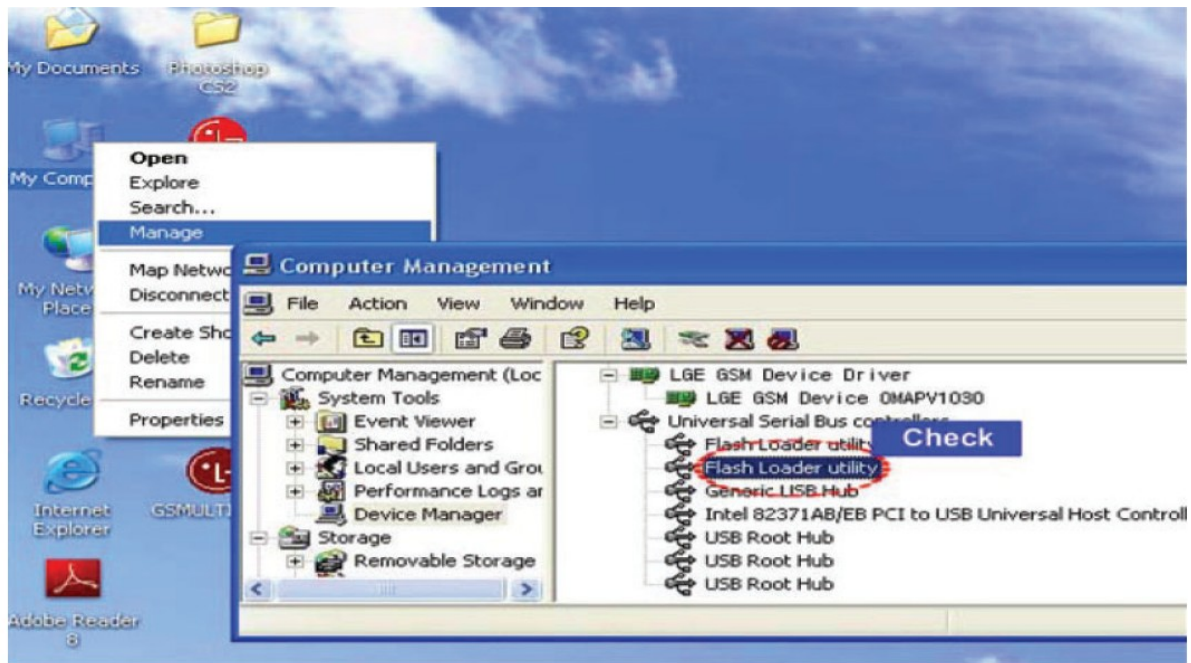
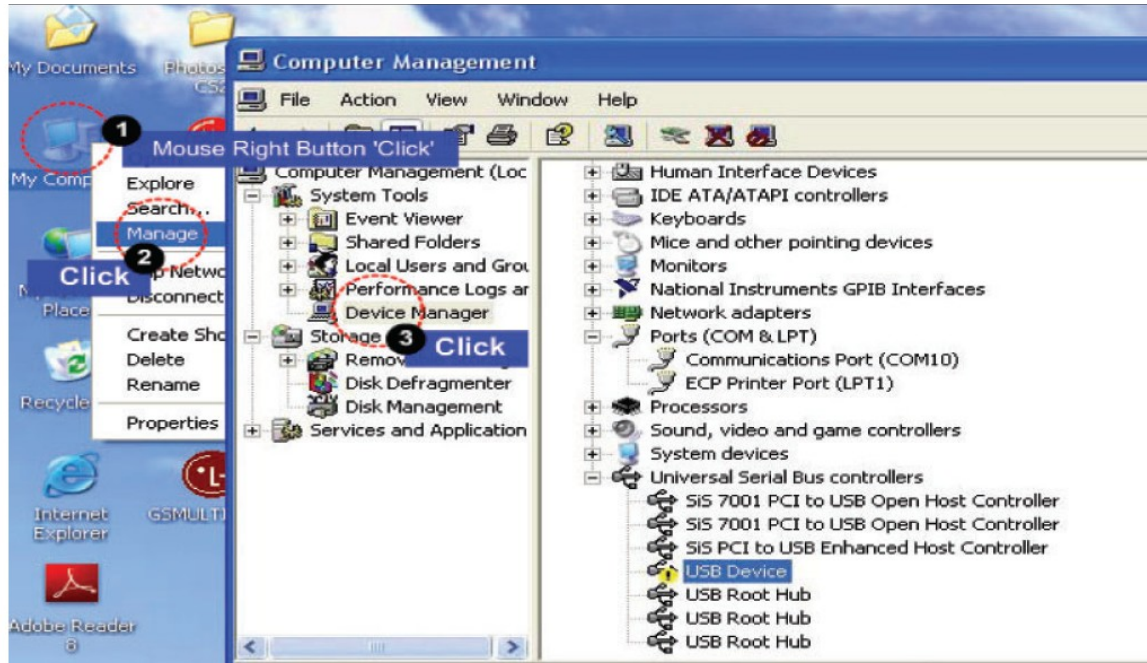
6. Download & S/W upgrade



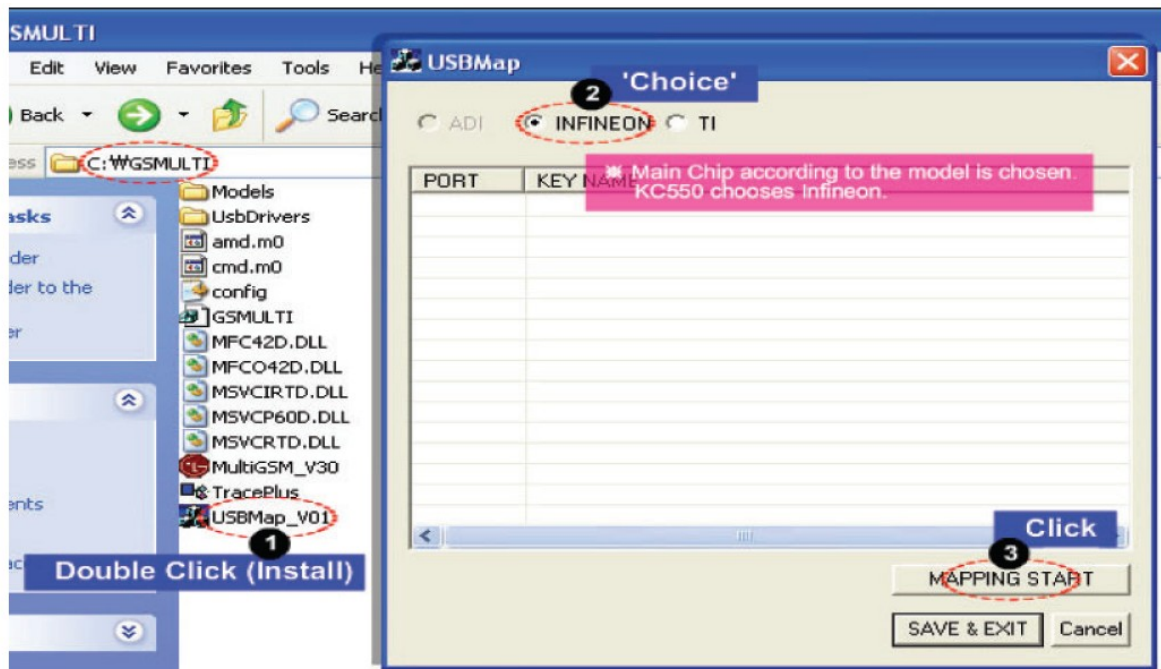
6. Download & S/W upgrade



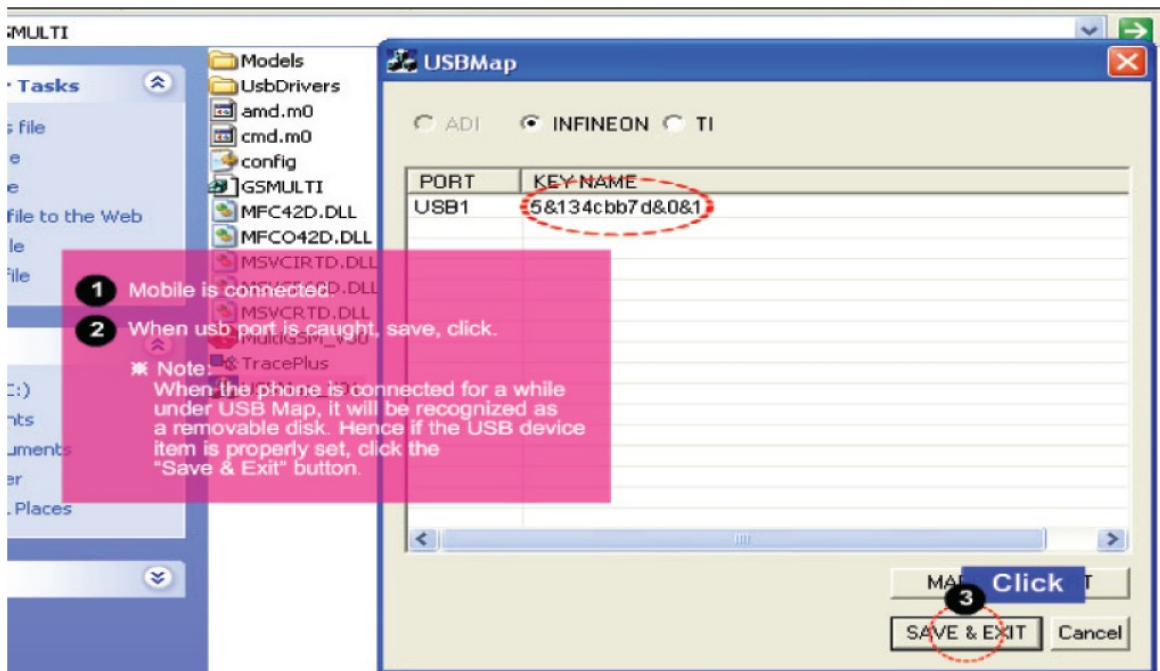
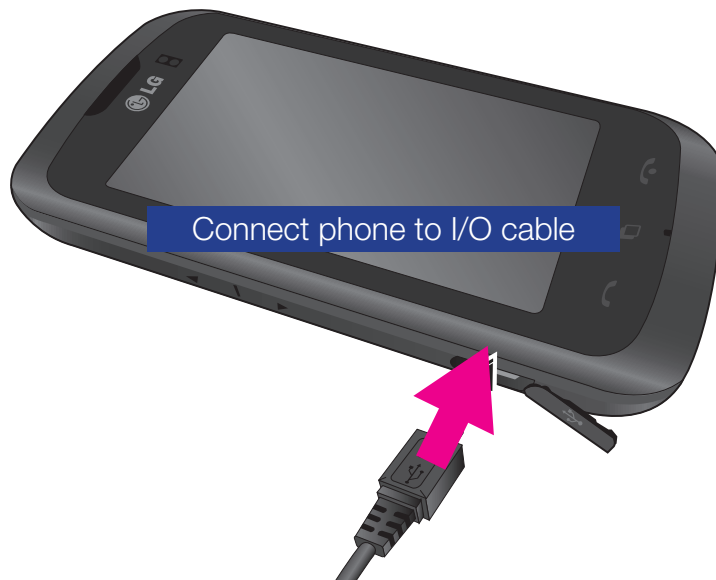
6. Download & S/W upgrade



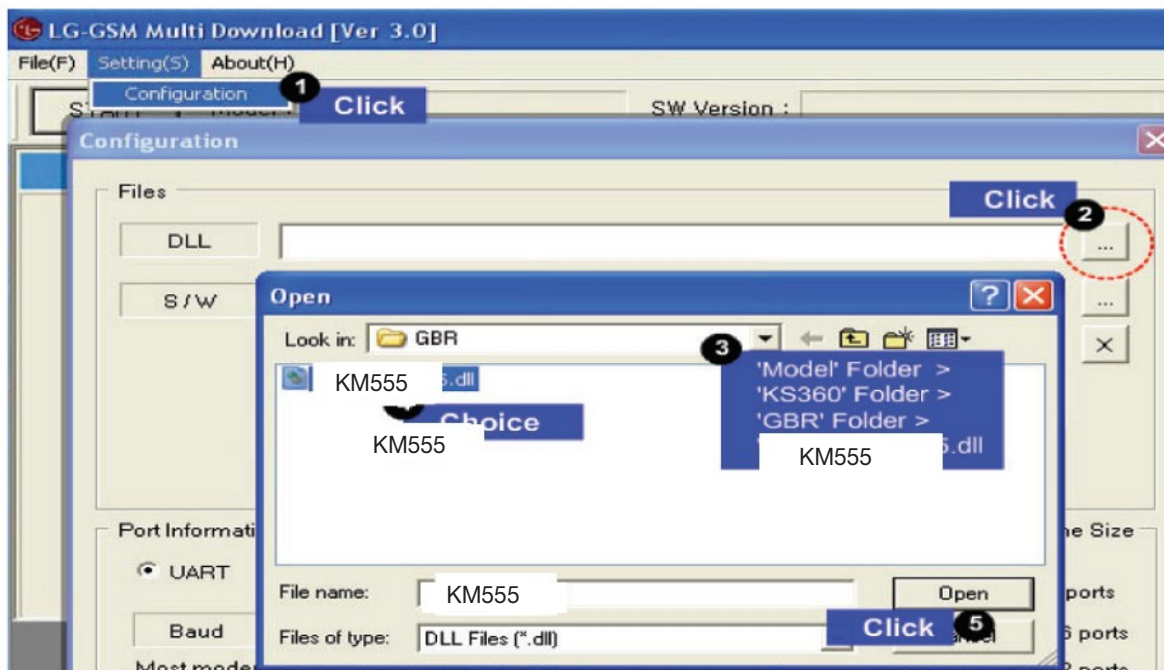
6. Download & S/W upgrade



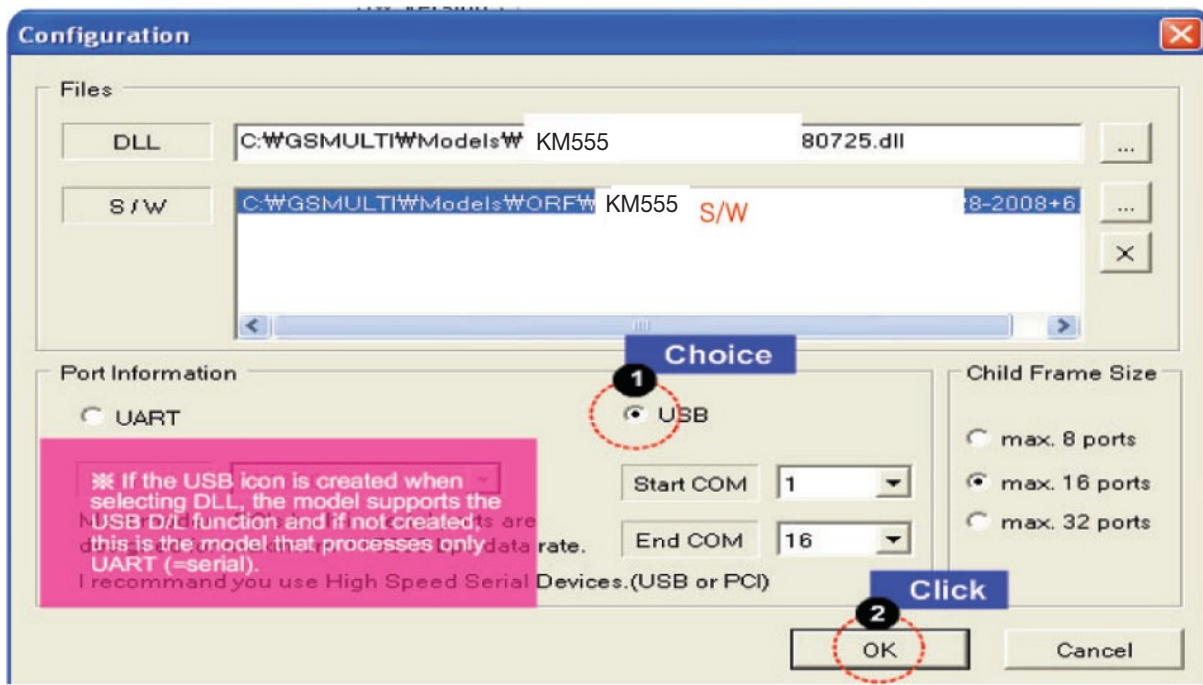
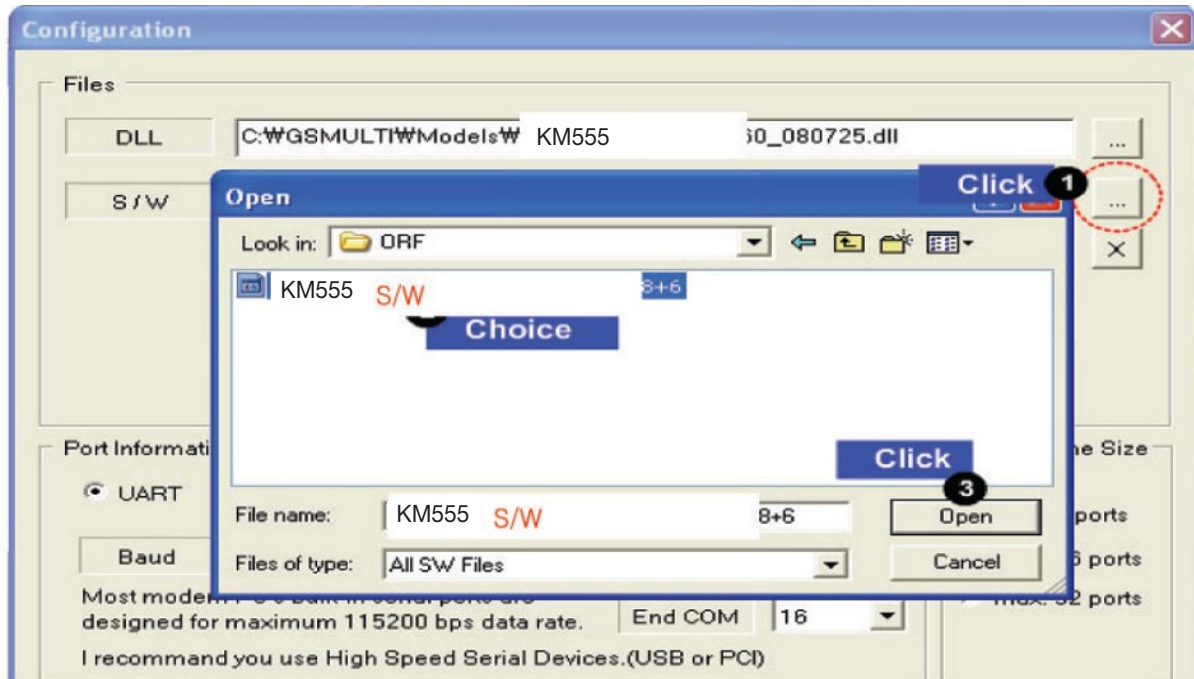
6. Download & S/W upgrade



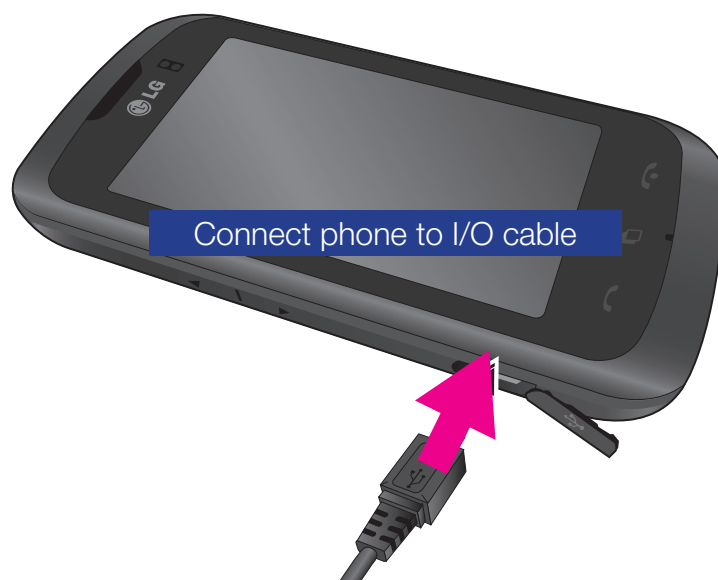
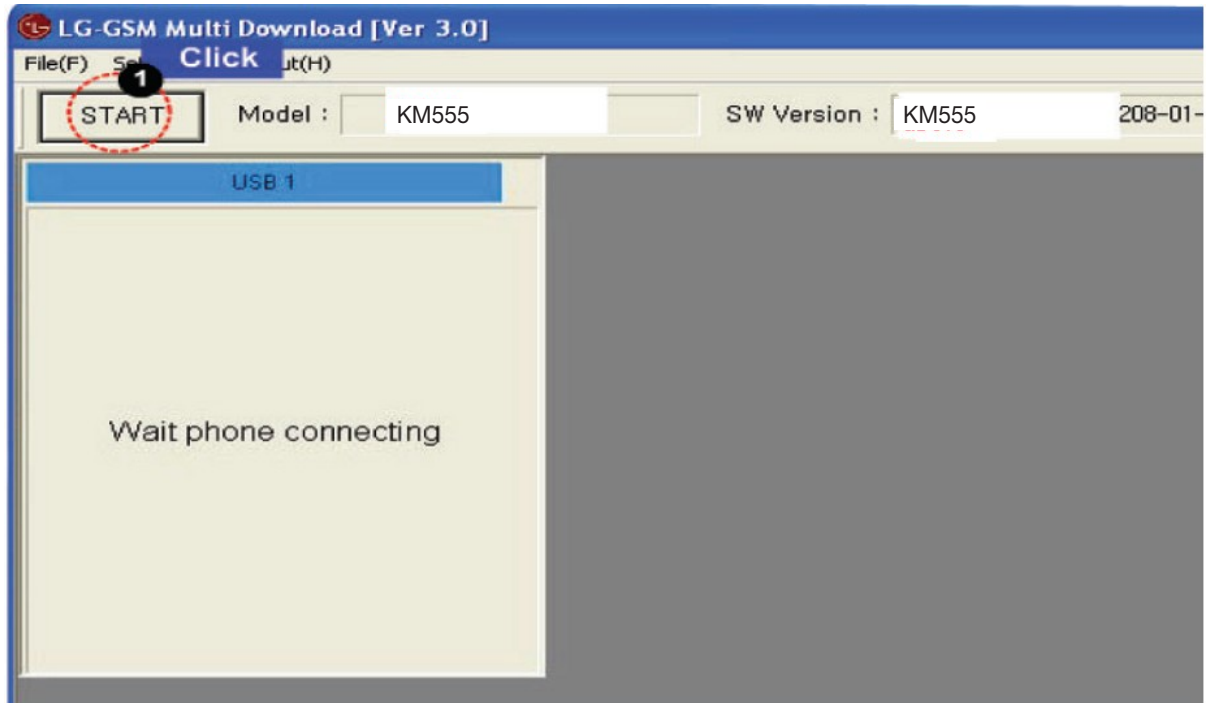
6. Download & S/W upgrade



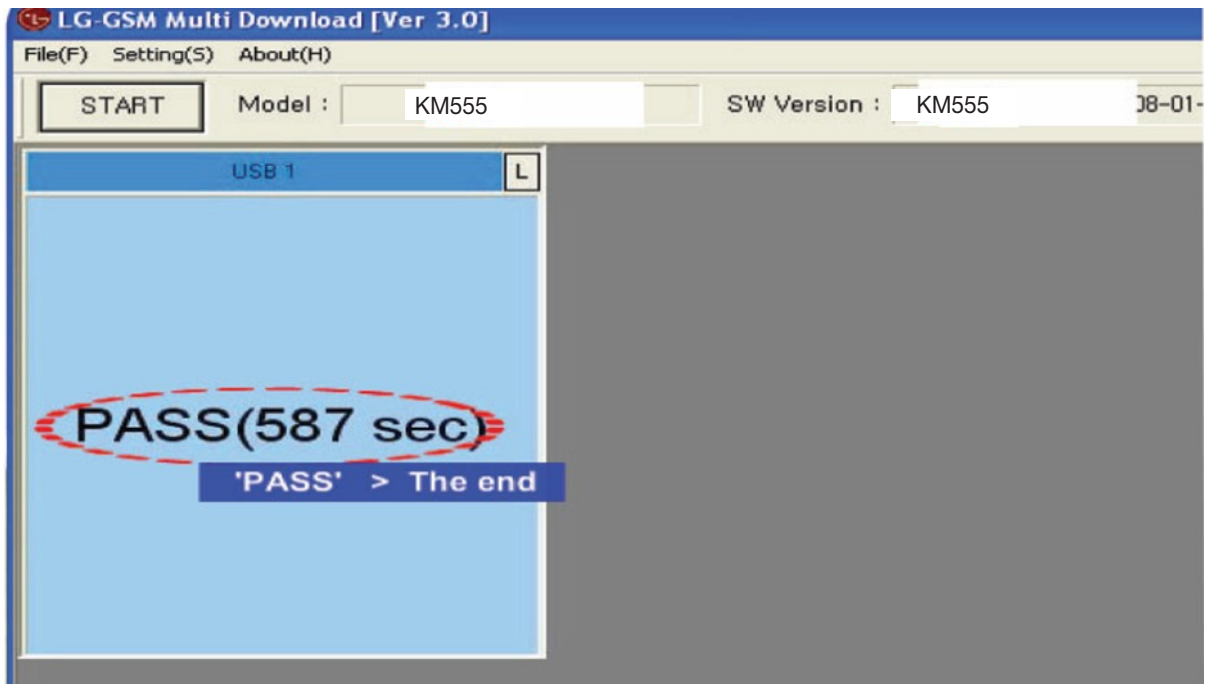
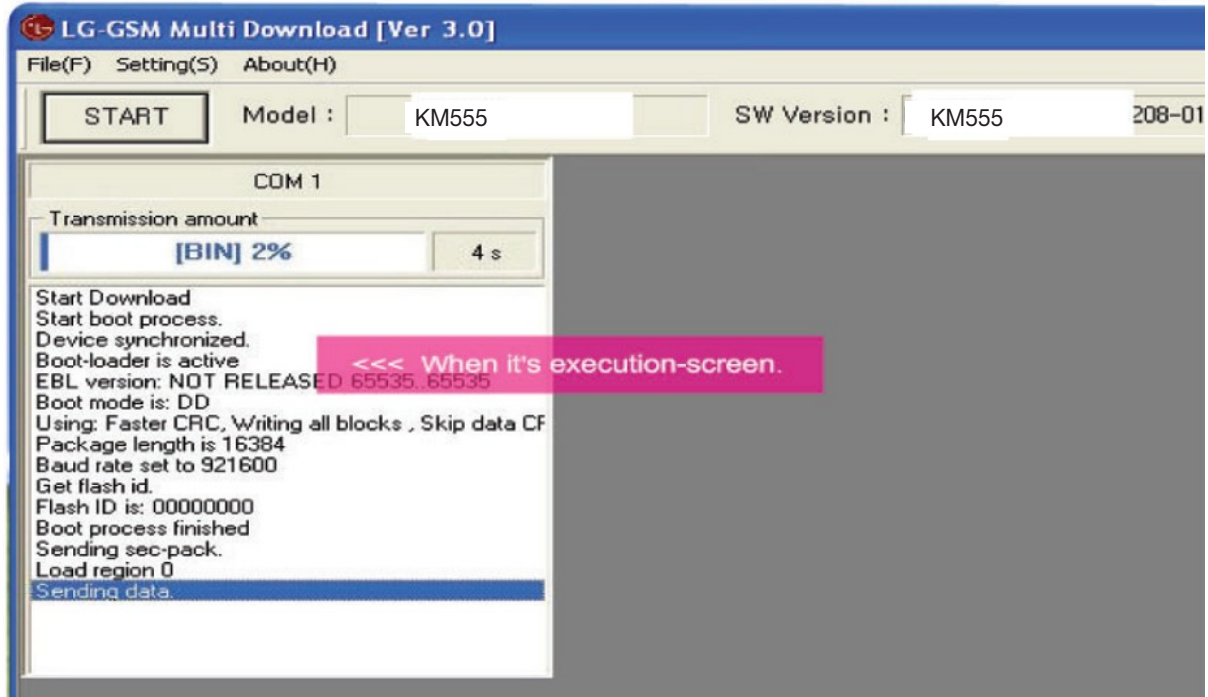
6. Download & S/W upgrade



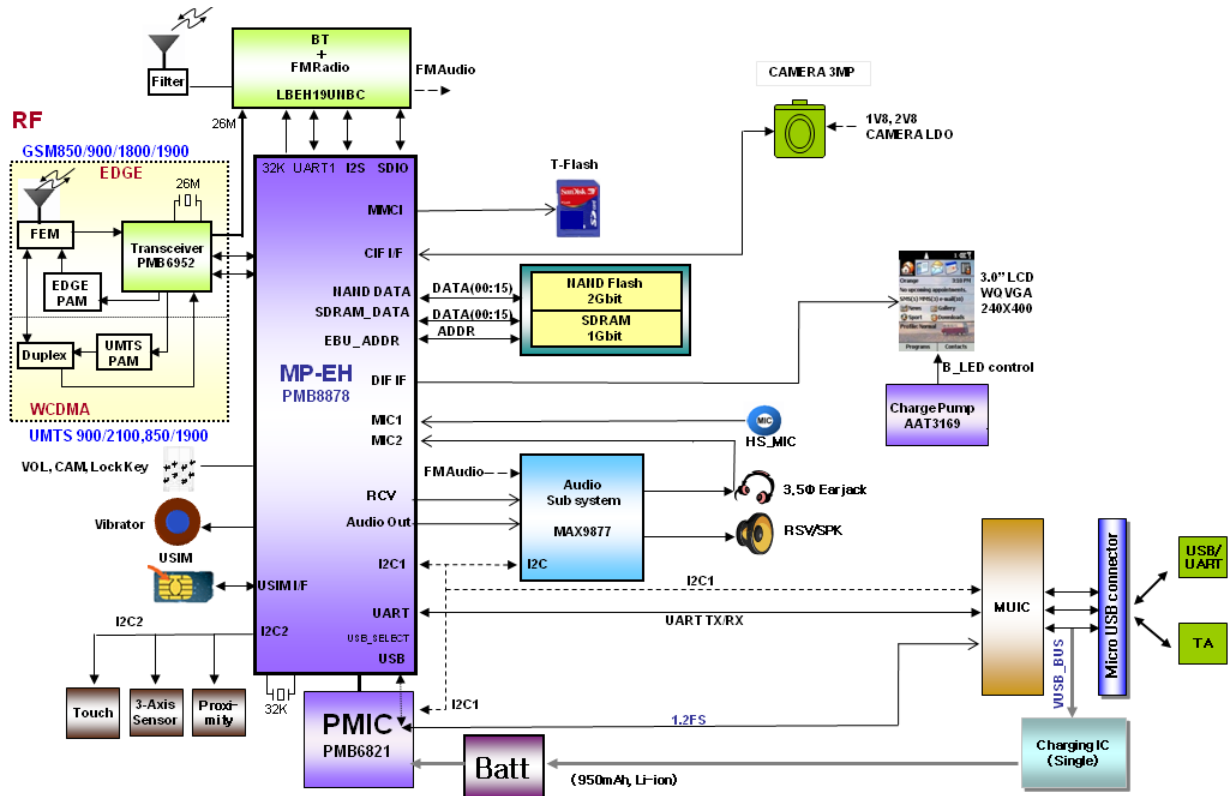
6. Download & S/W upgrade



6. Download & S/W upgrade

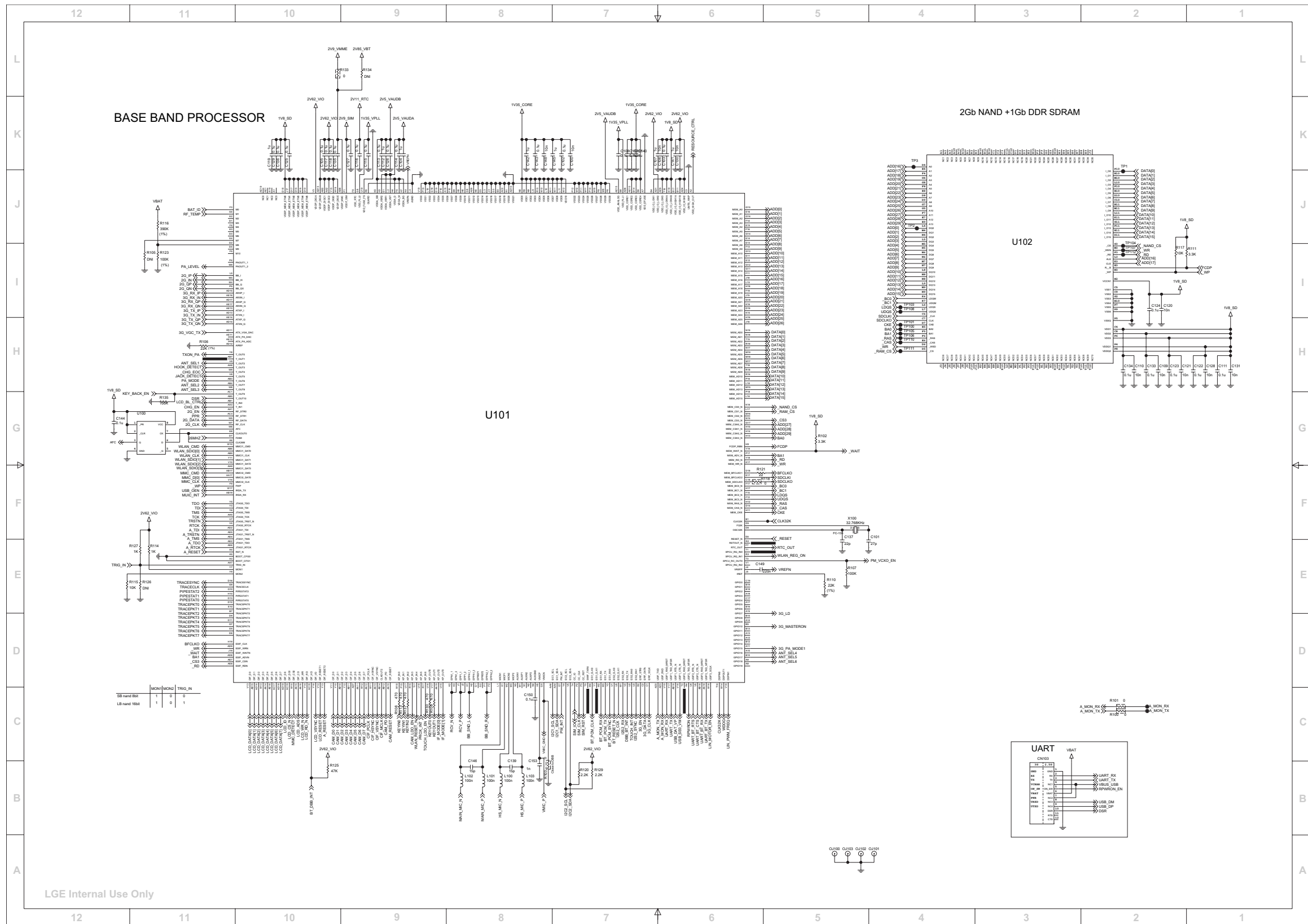


7. Block diagram

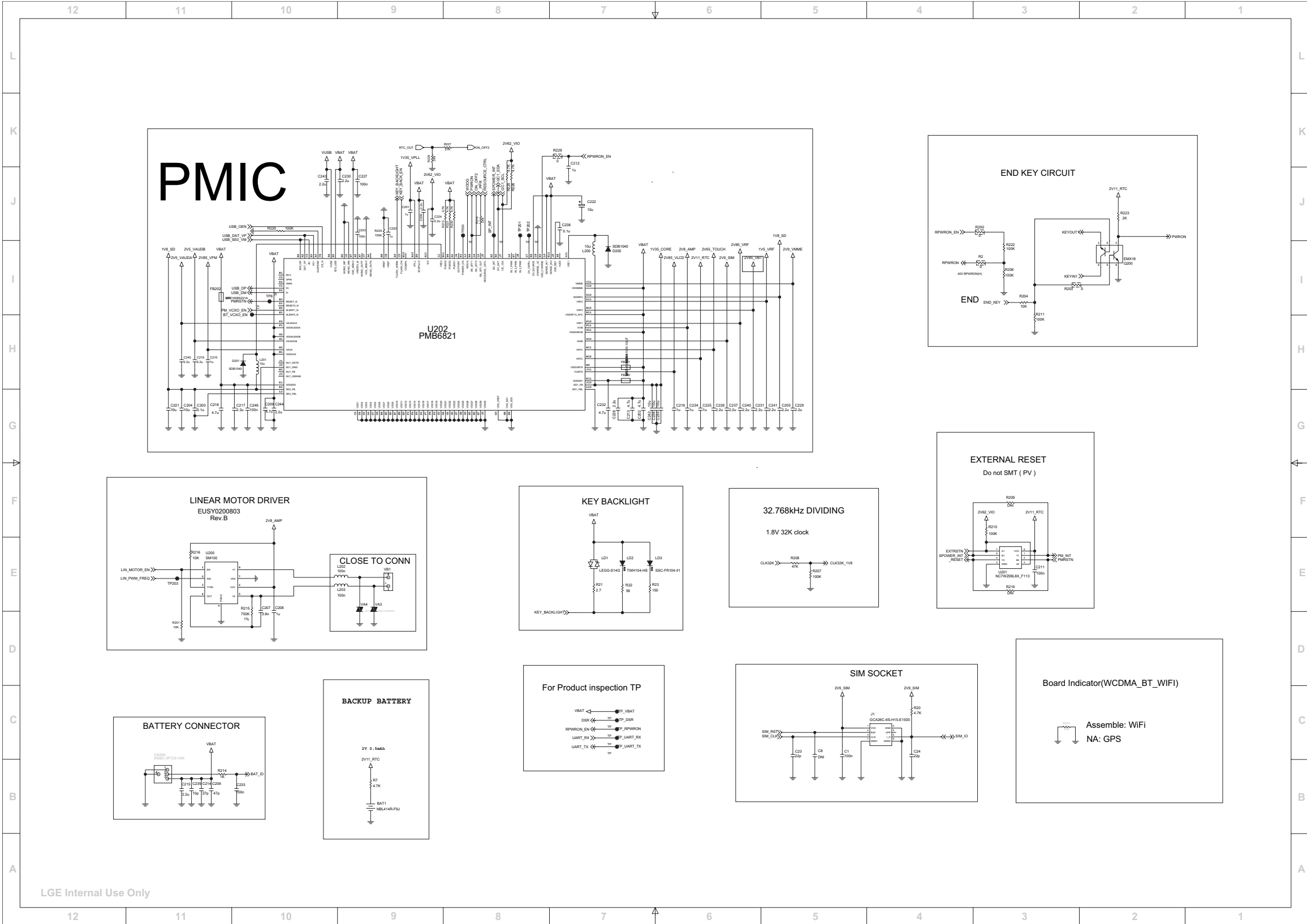




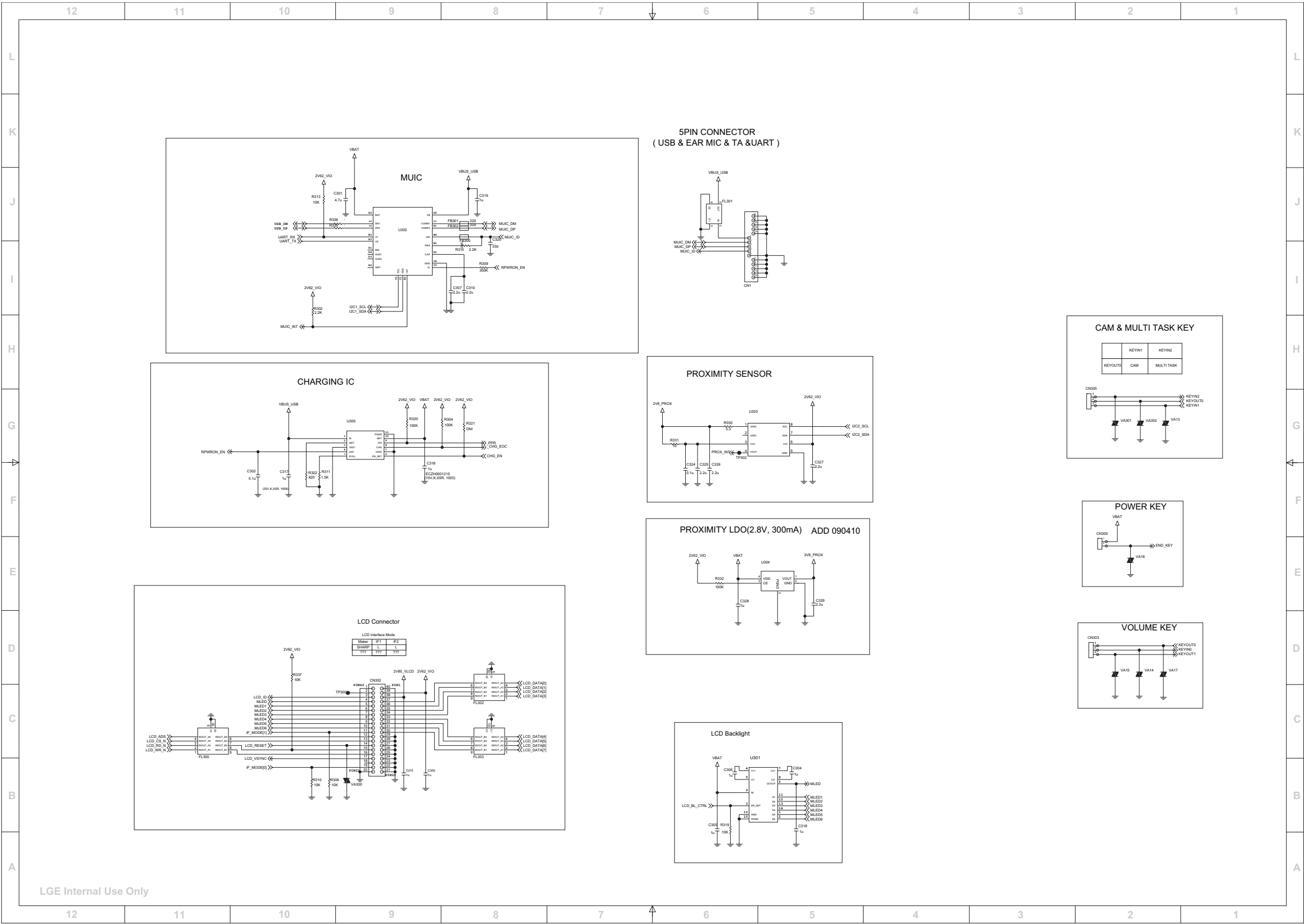
8. Circuit diagram



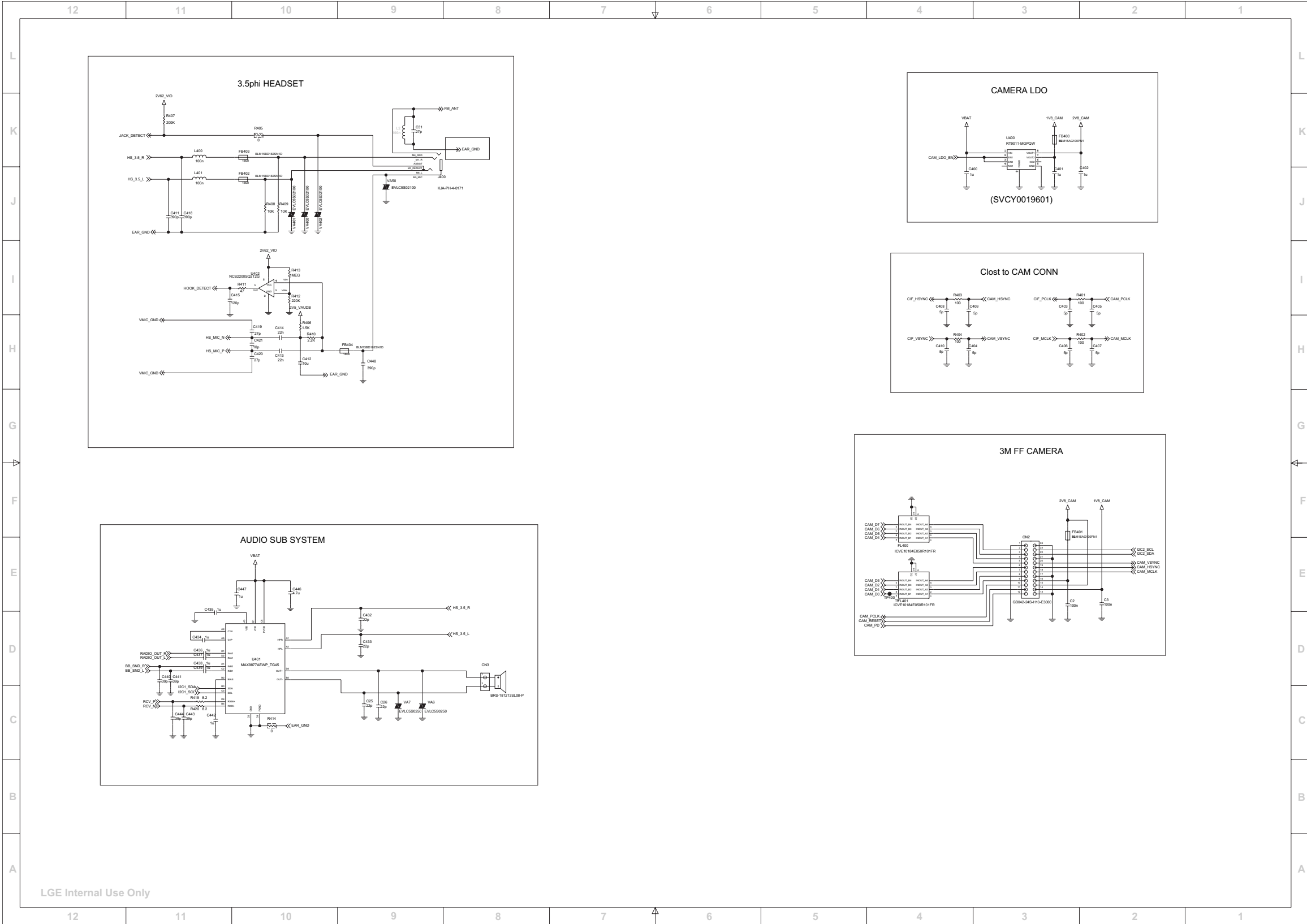
8. Circuit diagram



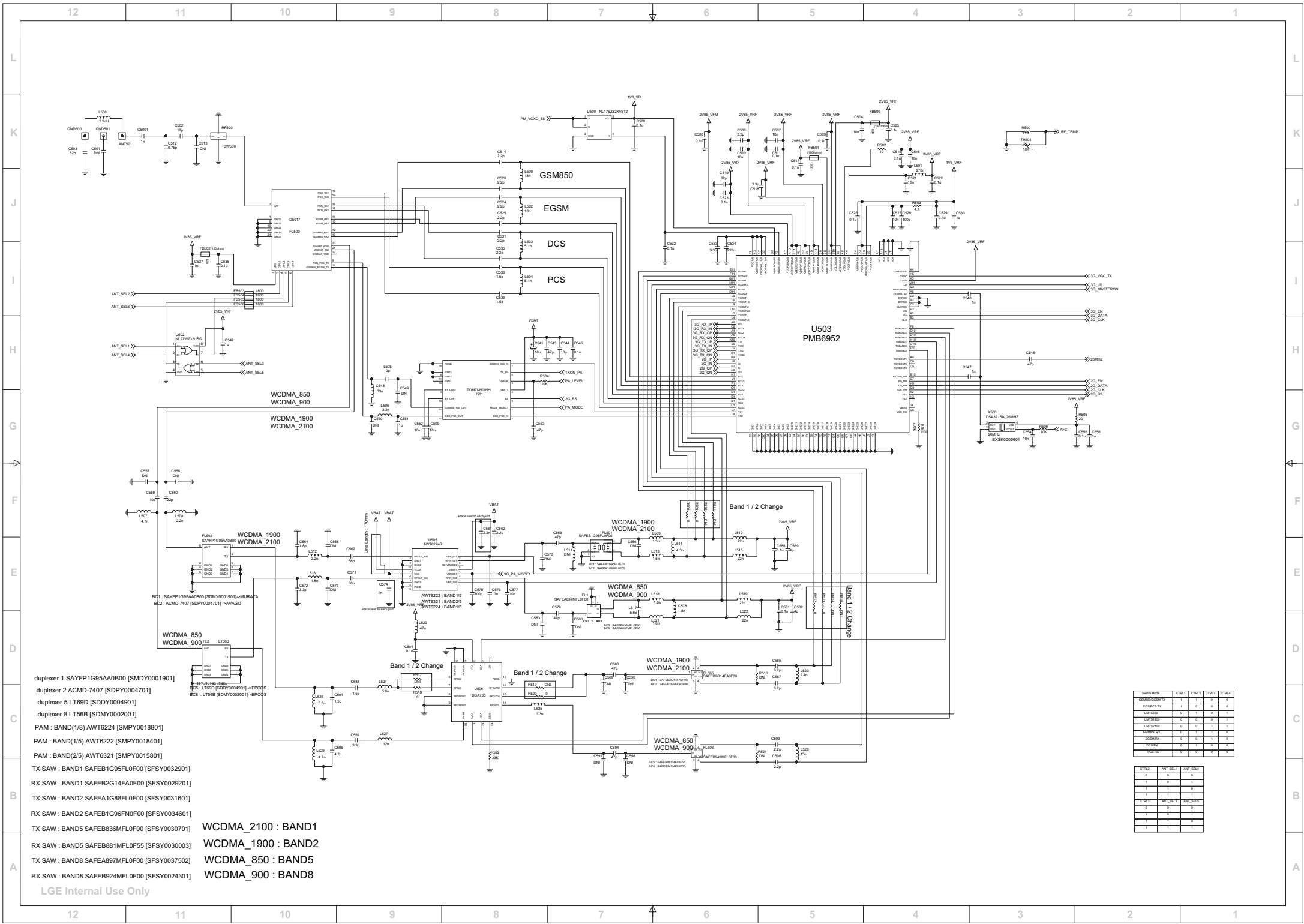
8. Circuit diagram



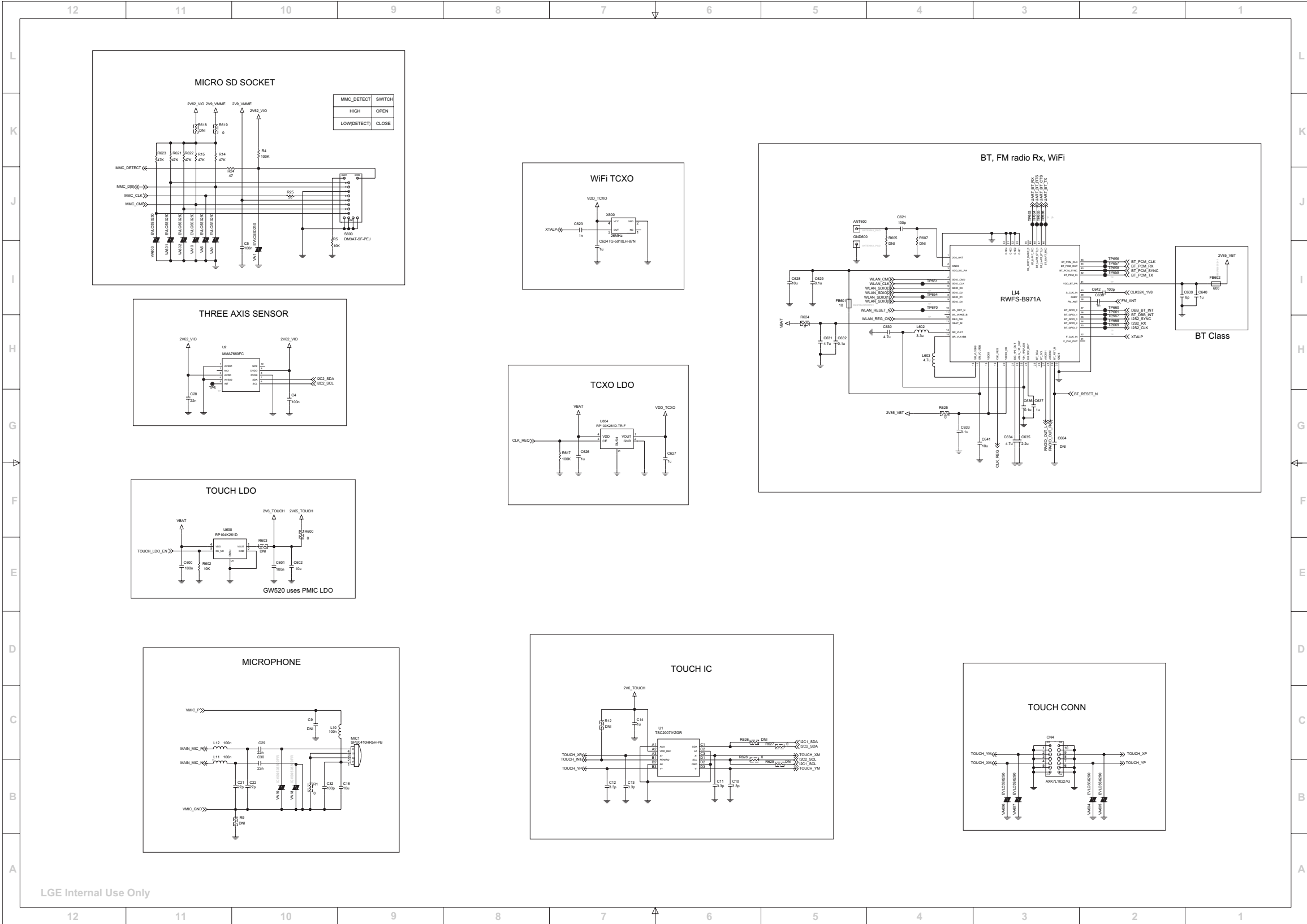
8. Circuit diagram



8. Circuit diagram



8. Circuit diagram



9. BGA Pin Map

PMB 8878(S-GOLD3H)

The Ballout topview for the S-GOLD[®]3H is shown in **Figure 6**.

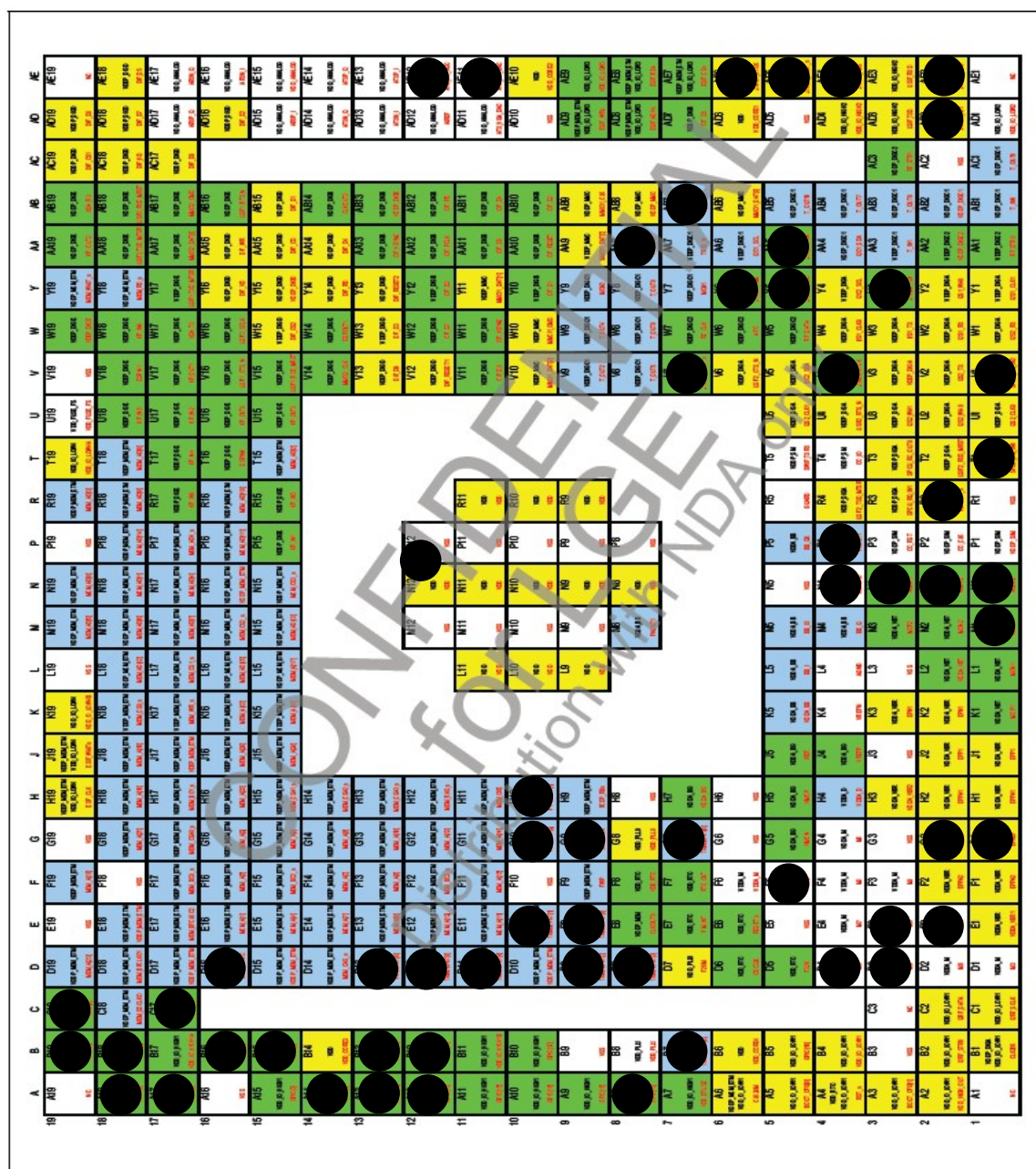


Figure 6 Ball-Out of S-GOLD[®]3H (Top View)

● : NC Pin

9. BGA Pin Map

PMB6821

PMB6821 Pin Configuration (Top View)

	1	2	3	4	5	6	7	8	9	10	11	
A	PUMS1	DAT_VP	SUSPEND	VUSB	VREFEX_M	MONO_O UTH	MONO_O UTP	VLED	FLASH_SI NK	VPLL	VIO	A
B	RCV	SES_VM	AC_Plus	PUMS2	VDOUSB	MONO_IN P	VDD_MO NO	RREF	VDDPLLI O	TXONPA	PUMS3	B
C	D_Plus	VPIN	AC_Minus	OE_N	MONO_IN H	VSS	VSS_MON O	VREF	FLASH_O N	VDDMMME	VMME	C
D	RESET2_ N	D_Minus	VMIN	VSS	VSS	VSS	VSS	VSS	VSS_VRE F	VDDRF2	VRF2	D
E	SLEEP2_ N	SLEEP1_ N	RESET_N	VSS	VSS	VSS	VSS	VSS	VSS	VRF3	VDDRF13 AFC	E
F	VDDAUDIO OA	VAUDIOA	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VRF1	VVIB	F
G	VAUDIOB	VDDAUDIO OB	VSS	VSS	VSS	VSS	VSS	VSS	VSS	VSSIM	VDDSIMV1 B	G
H	VDDAUX	VAUX	SU1_FB	VSS_SD2	VSS	VSS	VSS	VSS_SD1	VDDUMTS	VRTC	VAFC	H
J	SU1_GAT E	SU1_GND	SU1_ISEN SE	OUTPORT	RESOUR CE_CTRL	VSS	I2C_CLK	BL3_PWM	VDD_REF	SD1_FB	VUMTS	J
K	VDDSD2	SD2_FB	POWER ON	ON_OFF1	I2C_INT	I2C_DAT	BL2_PWM	CH_SOUR CE	VDDCHA RGE	SENSE_IN 2	VDDSD1	K
L	VSD2	SD2_FBL	WDOG	ON_OFF2	ON_OFF OUT	BL1_PWM	CH_CNTR L	CHARGE_ UC	SENSE_IN 1	SD1_FBL	VSD1	L
	1	2	3	4	5	6	7	8	9	10	11	

● : NC Pin

K55H1HACB-B060

	1	2	3	4	5	6	7	8	9	10	11	12
A	NC	NC	NC	-	-	-	-	-	-	NC	NC	NC
B	NC	NC	NC	-	-	-	-	-	-	NC	NC	NC
C	NC	NC	NC	VDDd	VSSd	/CKd	CKd	VDDd	VSSd	IO7n	NC	NC
D	NC	NC	NC	A0d	/CSd	/WEd	CKEd	A7d	A8d	IO6n	IO15n	-
E	-	NC	R/Bn	A1d	BA0d	/CASd	A12d	A6d	A13d	IO5n	IO14n	-
F	-	NC	/REn	A2d	BA1d	/RASd	A11d	A5d	NC	IO4n	IO13n	-
G	-	VSSn	/CEn	A3d	A10d	NC	A9d	A4d	NC	NC	IO12n	-
H	-	VCCn	NC	NC	NC	NC	NC	NC	NC	VSSn	NC	-
J	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	-
K	-	NC	CLEn	NC	NC	LDMd	UDMd	NC	NC	NC	IO11n	-
L	-	NC	ALEn	DQ0d	DQ3d	LDQSd	UDQSd	DQ10d	DQ13d	IO3n	IO10n	-
M	-	NC	/WEn	DQ1d	DQ4d	DQ6d	DQ8d	DQ11d	DQ14d	IO2n	IO9n	-
N	-	NC	/WPn	DQ2d	DQ5d	DQ7d	DQ9d	DQ12d	DQ15d	IO1n	IO8n	-
P	NC	NC	NC	VDDQ	VSSQd	VDDd	VSSd	VDDQd	VSSd	IO0n	NC	NC
R	NC	NC	NC	-	-	-	-	-	-	NC	NC	NC
T	NC	NC	NC	-	-	-	-	-	-	NC	NC	NC

149 FBGA: Top View (Ball Down)

	NAND Flash
	Mobile DDR
	Power
	Ground
	NC/DNU

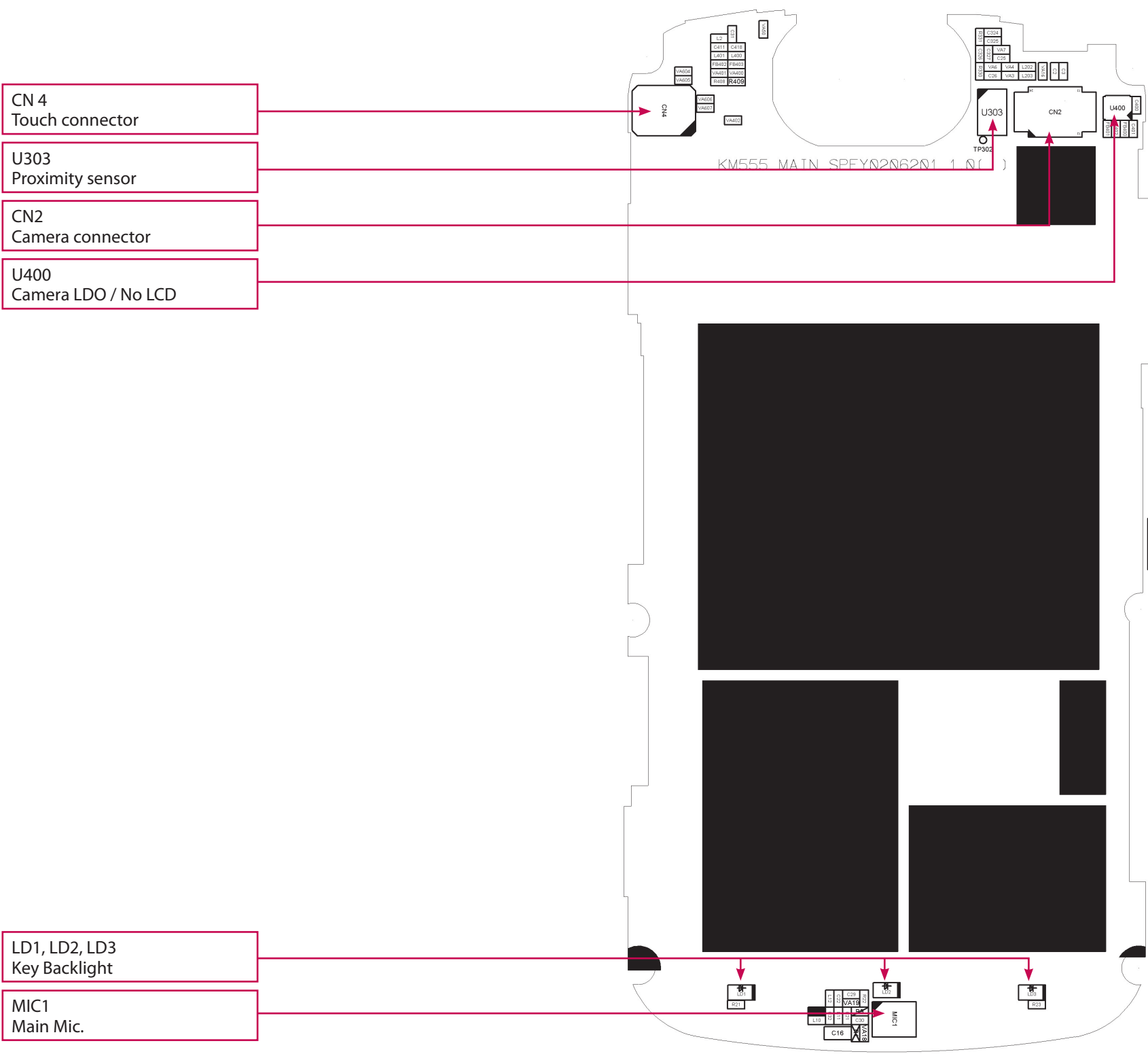
*** NC pin is not used



10. PCB Layout

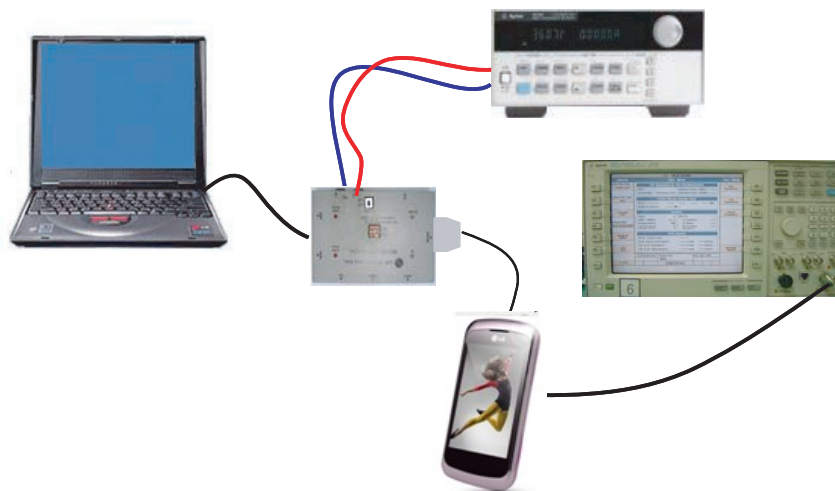


10. PCB Layout



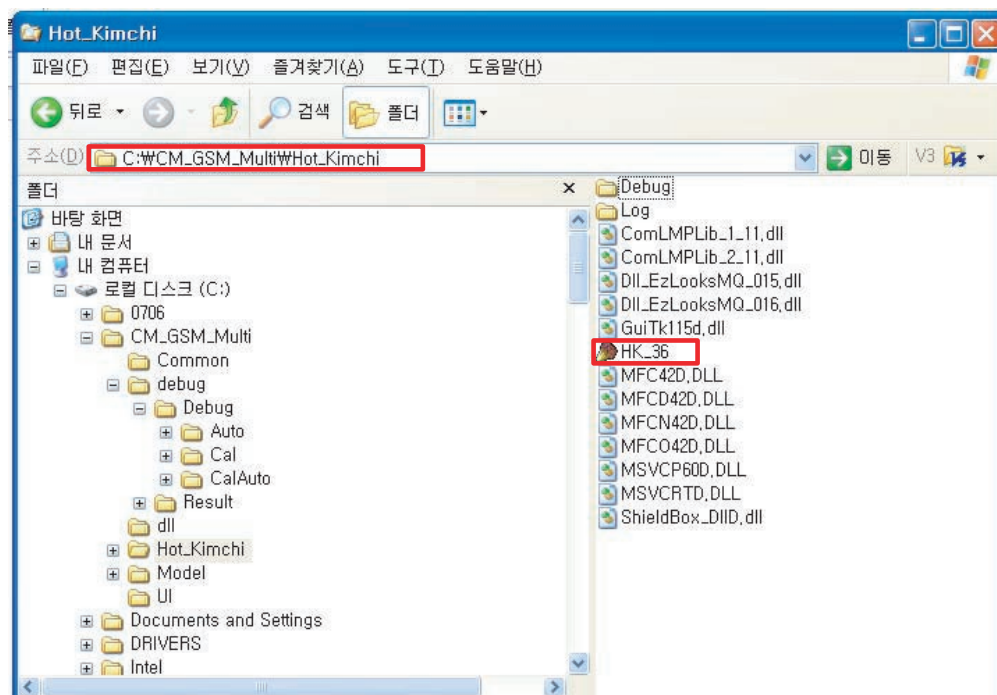
11. RF Calibration

11.1. Test Equipment Setup



11.2. Calibration Step

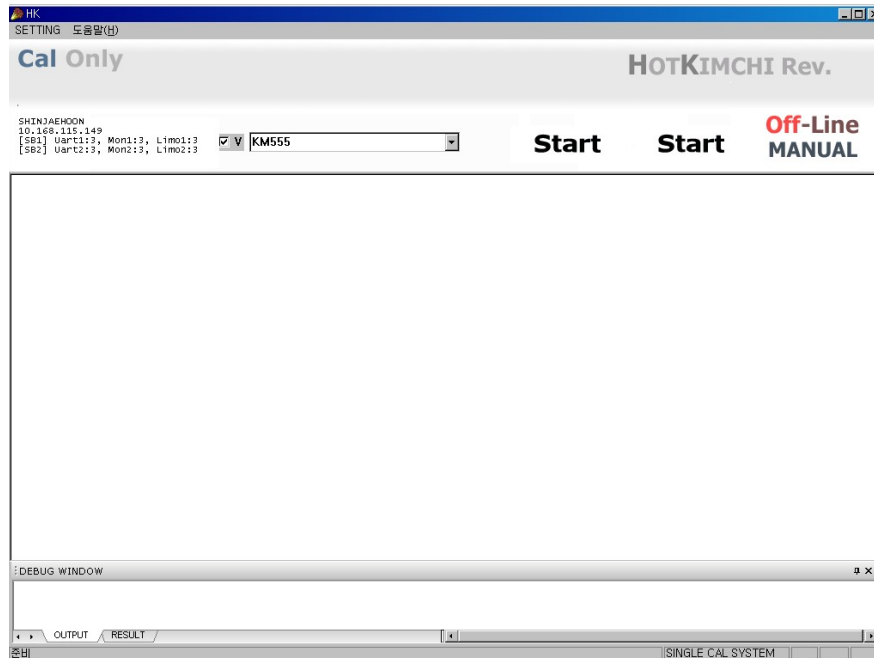
11.2.1. Turn on the Phone.



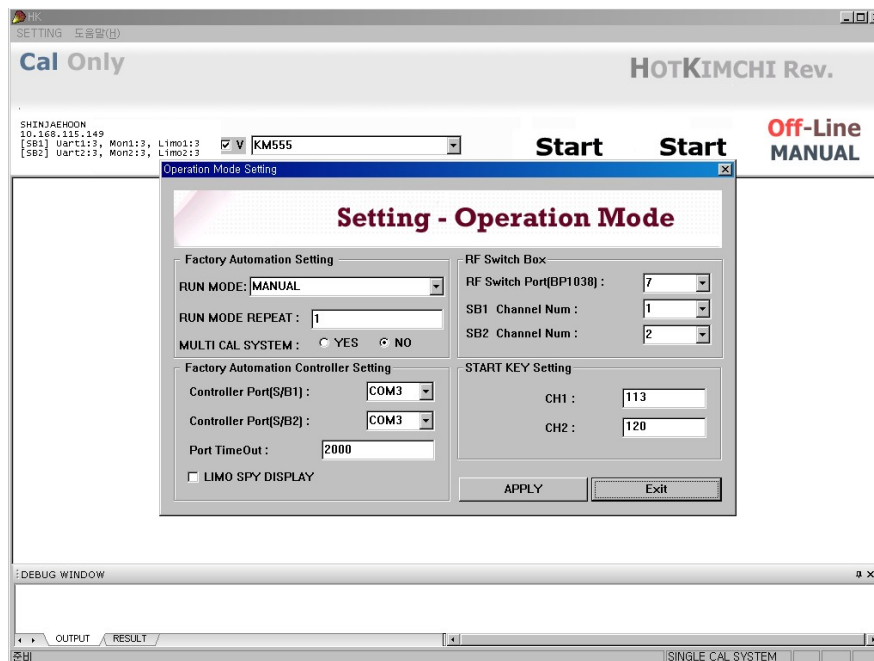
Execute "HK_36.exe"

11. RF Calibration

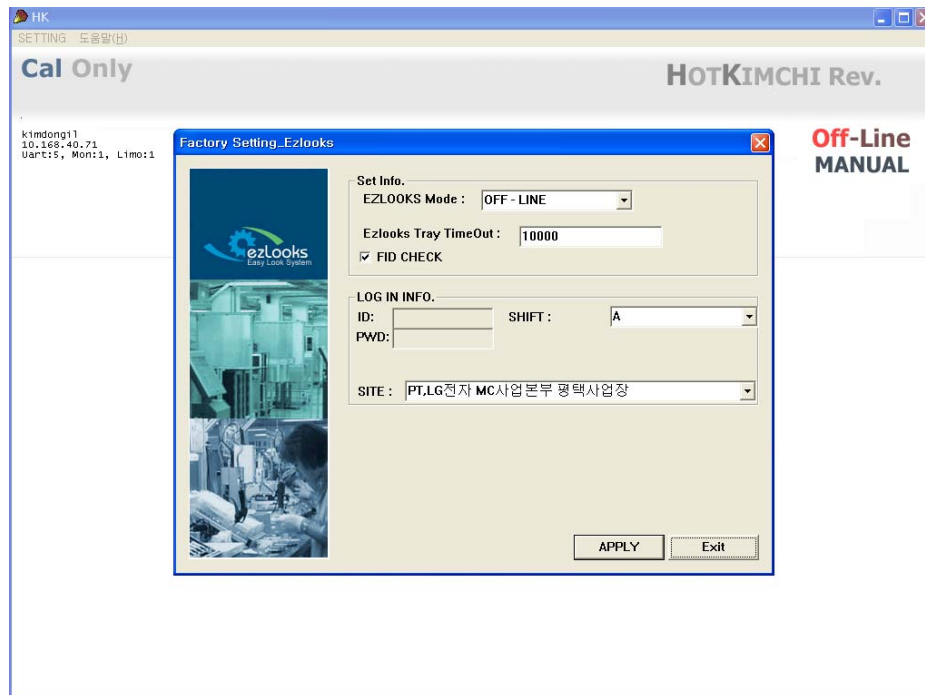
11.2.2. Click “SETTING” Menu



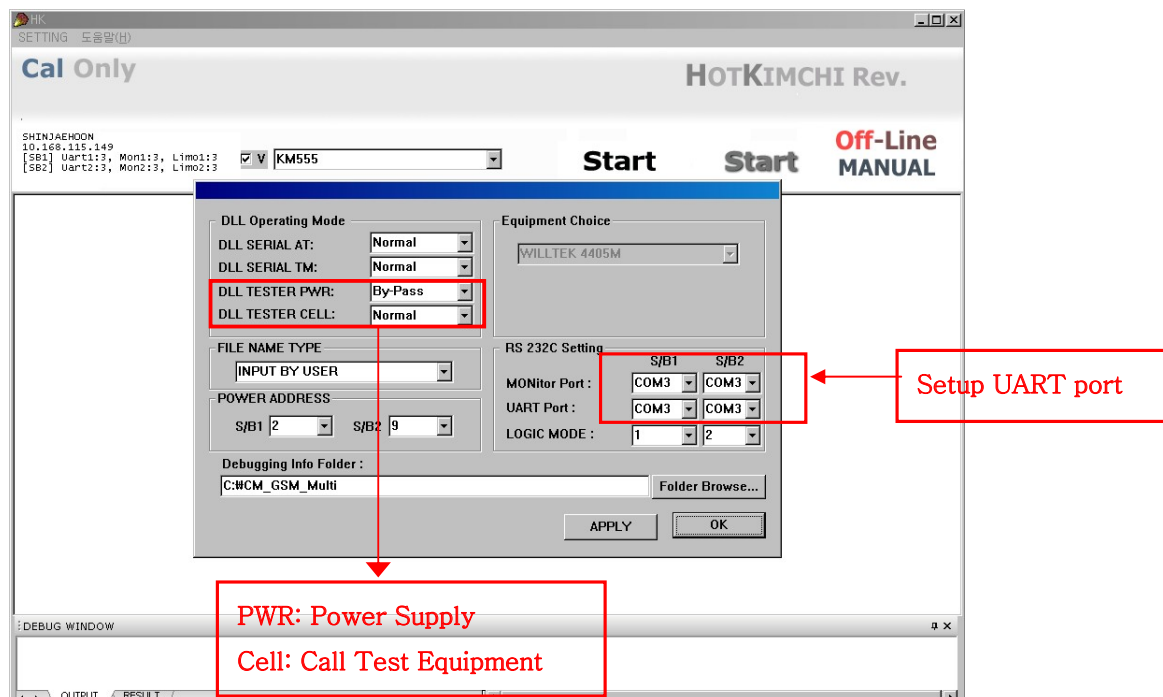
11.2.3. Setup “Ezlooks” menu such as the following figure



11.2.4. Setup "Line System" menu such as the following figure



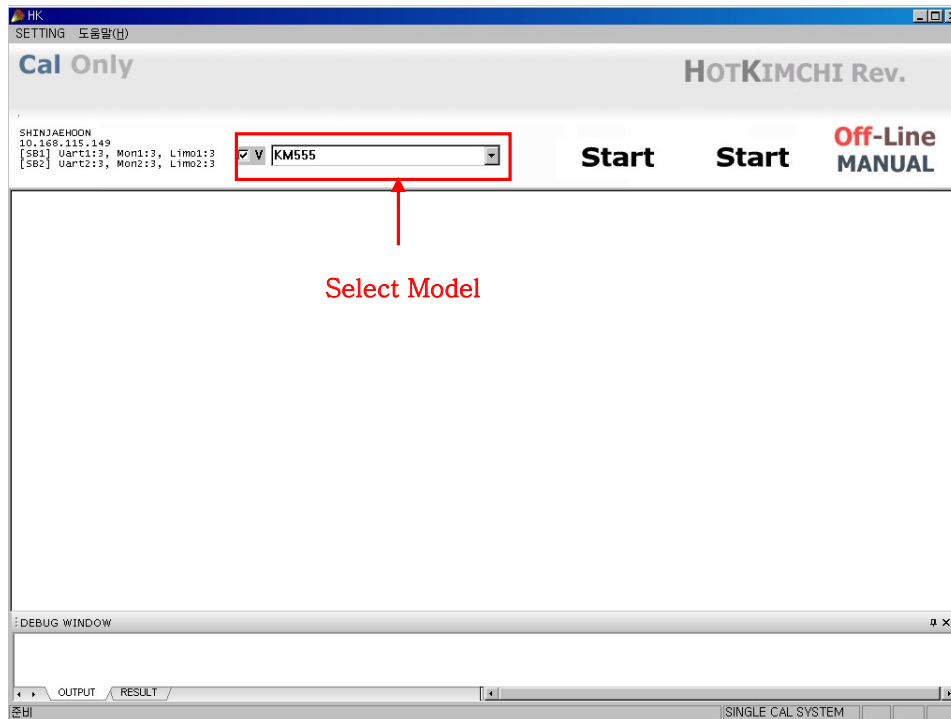
11.2.5 Setup Logic operation such as the following figure.



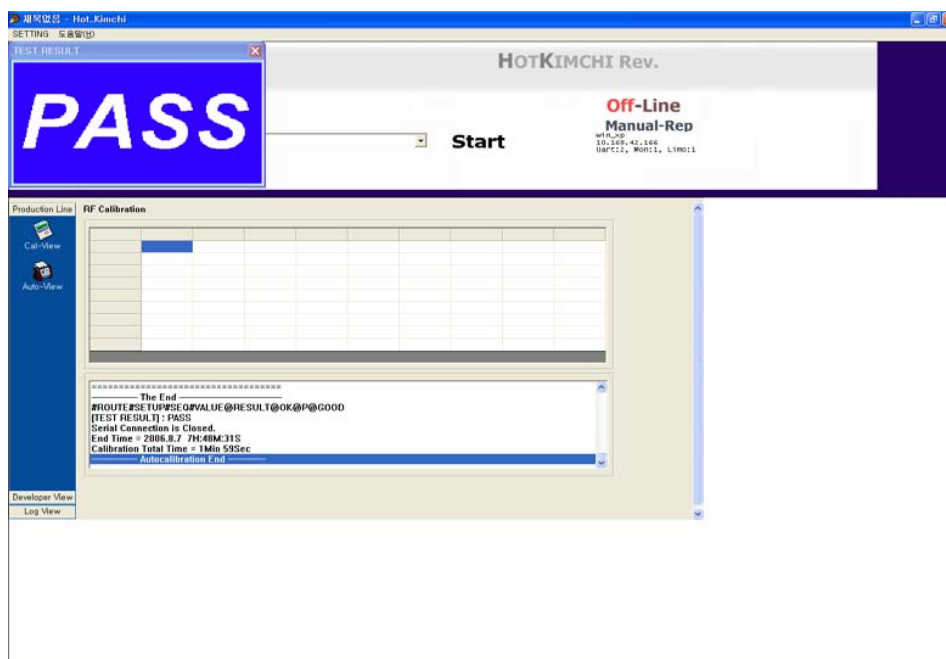
11. RF Calibration

11.2.6. Select "MODEL".

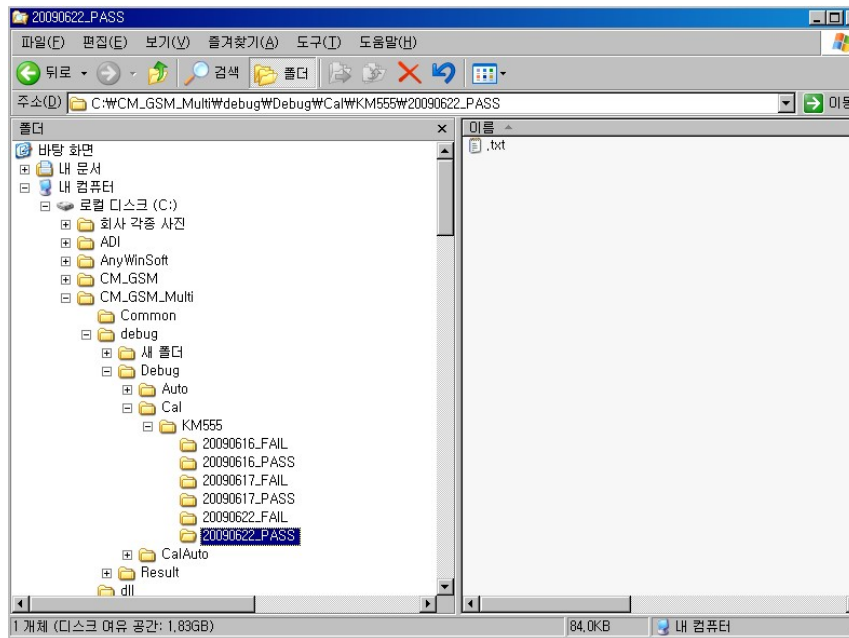
11.2.7. Click "START" for RF calibration



11.2.8. RF Calibration finishes



11.2.9 Calibration data will be saved to the following folder.



Notices:

1. The state of Phone is “ptest mode” during the CALIBRATION.
2. Calibration program automatically changes either “normal mode” or “ptest mode”.
3. Phone operation Mode



< Normal Mode >

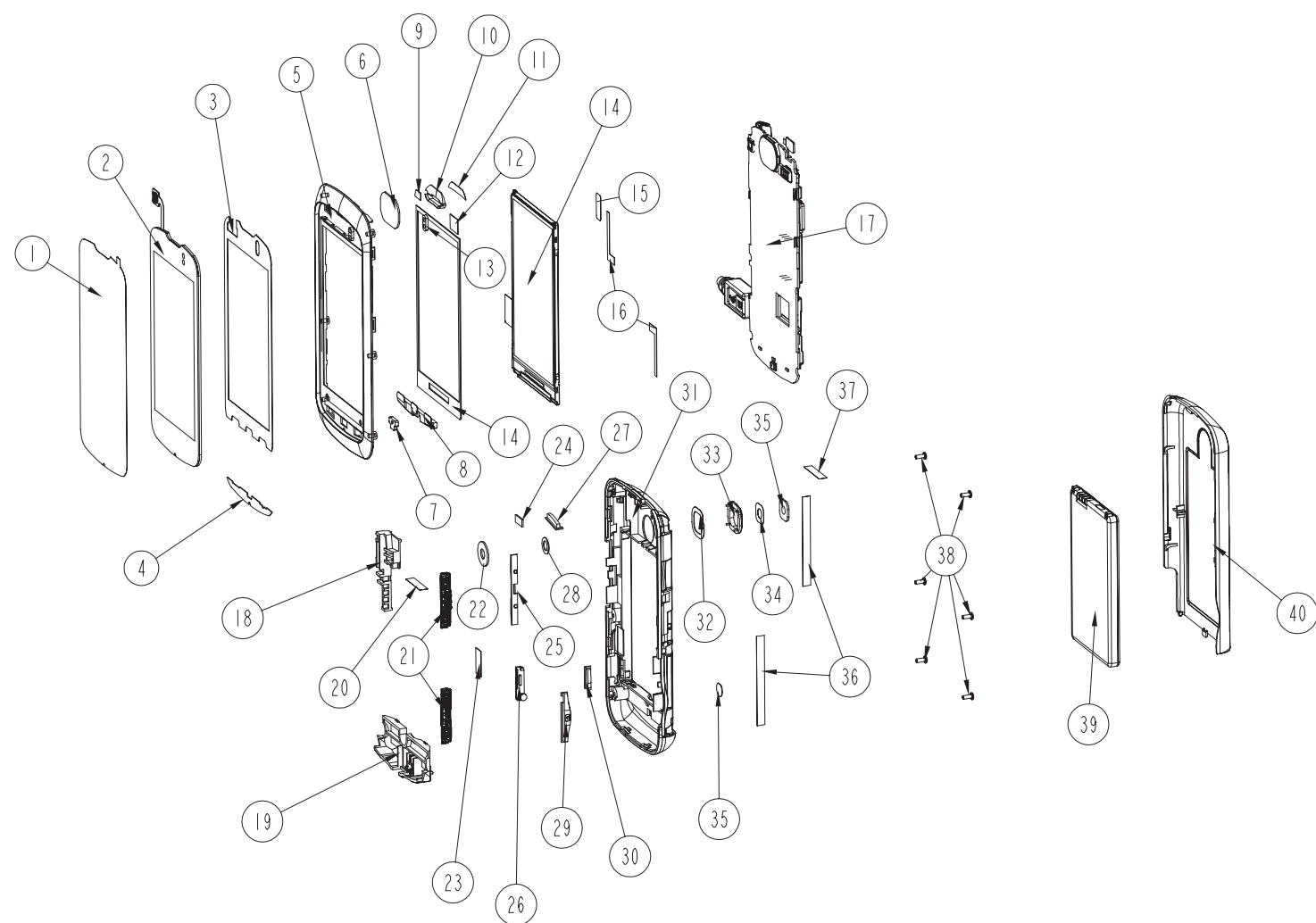


<Ptest Mode>



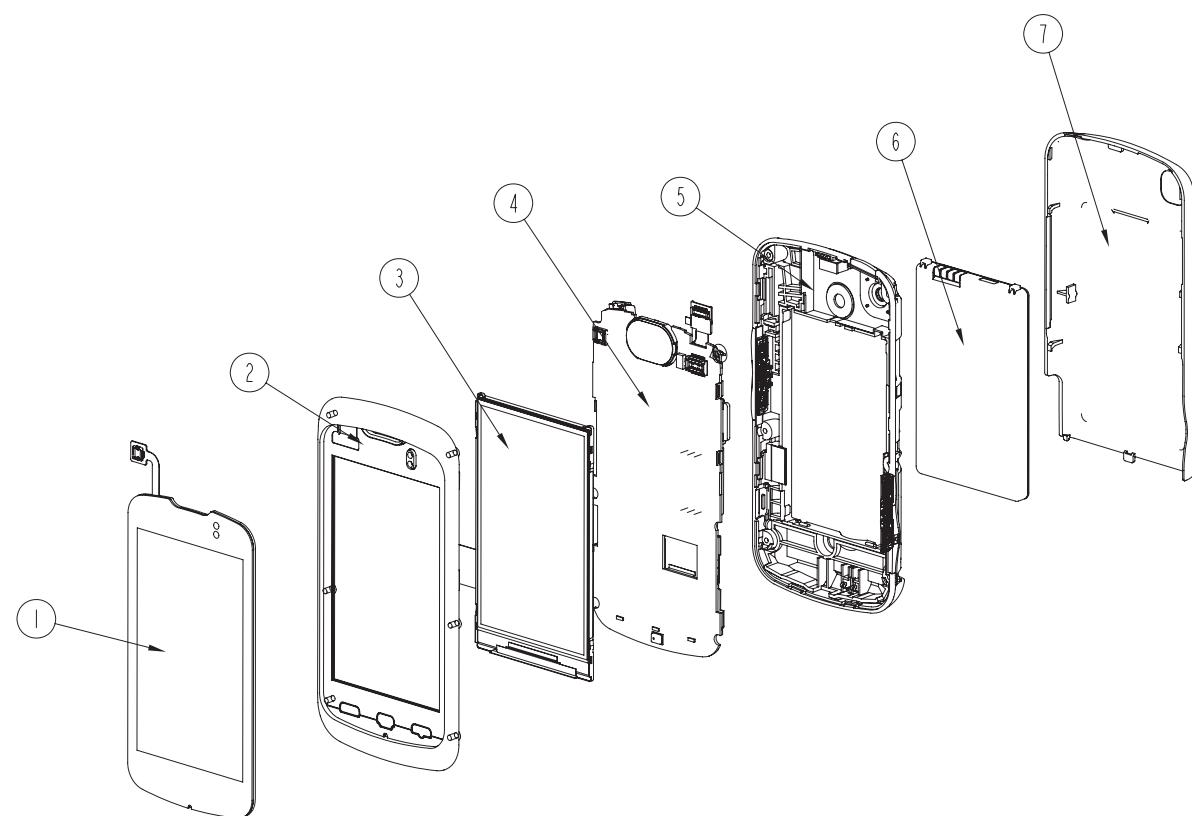
12. Exploded view & Replacement part list

12.1 Exploded view



40	COVER, BATTERY	MCJA010240I	1	
39	BATTERY PACK, LI-POLYMER	SBPP0026902	1	
38	SCREW, MACHINE(MAIN)	GMEY000920I	6	
37	TAPE, PROTECTION(POWER)	MTAB036560I	1	
36	TAPE, PROTECTION(SIDE)	MTAB0365602	2	
35	WINDOW, CAMERA	MWAE005530I	1	
34	TAPE, WINDOW(CAMERA)	MTAD011270	1	
33	DECO(CAMERA_WINDOW)	MDAD005180I	1	
32	TAPE, (DECO CAMERA)	MTAA020410I	1	
31	COVER, REAR	MCJN011310I	1	
30	BUTTON, SIDE(MM)	MBJL010490I	1	
29	BUTTON, SIDE(CAMERA)	MBJL010460I	1	
28	PAD, CAMERA	MPBT008130I	1	
27	BUTTON, SIDE(POWER)	MBJL010480I	1	
26	CAP, RECEPTACLE	MCCE005610I	1	
25	BUTTON, SIDE(VOLUME)	MBJL010470I	1	
24	PAD, SPEAKER(REAR)	MPBN008140I	1	
23	PAD, CONNECTOR(LCD)	MPBU007810I	1	
22	PAD, MOTOR	MPBJ006830I	1	
21	CONTACT, SIDE BUTTON(TWO)	ACFA0000302	2	
20	INSULATOR(SPK)	MIDZ023910I	1	
19	ANTENNA (MAIN)	SGNF005080I	1	
18	ANTENNA (BT)	SGNF005100I	1	
17	PCB ASSY, MAIN	SAFY034320I	1	
16	TAPE, GASKET(SIDE BUTTON)	MGAZ008170I	2	
15	TAPE, GASKET(CAMERA CNT)	MGAZ008020I	1	
14	LCD MODULE	SVLM003520I	1	
13	PAD(IR SENSOR)	MPBZ023900I	1	
12	PAD, CONNECTOR(CAMERA)	MPBU007780I	1	
11	TAPE, DECO(SPEAKER)	MTAA020150I	1	
10	DECO, SPEAKER	MDAN001920I	1	
9	PAD, CONNECTOR(TOUCH)	MPBU007800I	1	
8	GUIDE(LIGHT)	MGDZ000030I	1	
7	PAD, MIKE	MPBH005090I	1	
6	FILTER, SPEAKER	MFBC005410I	1	
5	COVER, FRONT	MCJK011850I	1	
4	SHEET(LIGHT PC SHEET)	MSAZ005890I	1	
3	TAPE, WINDOW(MAIN)	MTAD011790I	1	
2	WINDOW, LCD	MWAC012630I	1	
1	TAPE, PROTECTION(MAIN W/D)	MTAB034160I	1	
No	Part Name	Part Number	Q'ty	Remark

ASS'Y Exploded view



7	COVER BATTERY	MCJA0102401	1	
6	BATTERY PACK, LI-POLYMER	SBPP0027501	1	
5	COVER ASSY, REAR	ACGM0147301	1	
4	PCB ASSY, MAIN	SAFY0343201	1	
3	LCD MODULE	SVLM0035201	1	
2	COVER ASSY, FRONT	ACGK0149301	1	
1	WINDOW, LCD	MWAC0126301	1	
No	Part Name	Part Number	Q'ty	Remark

12. Exploded view & Replacement part list

12.2 Replacement Parts <Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
2	APEY	PHONE	APEY0838101		BLACK	
3	ACGM00	COVER ASSY,REAR	ACGM0139501		BLACK	
4	MBJL00	BUTTON,SIDE	MBJL0100701	COMPLEX, (empty), , , , ,	BLACK	
4	MCCE00	CAP,RECEPTACLE	MCCE0053501	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	
4	MCCF00	CAP,MOBILE SWITCH	MCCF0065101	COMPLEX, (empty), , , , ,	BLACK	
4	MCJN00	COVER,REAR	MCJN0107601	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	
4	MDAD00	DECO,CAMERA	MDAD0050701	COMPLEX, (empty), 0.3, , , ,	BLACK	
4	MDAY00	DECO	MDAY0042501	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	
4	MLAB	LABEL,A/S	MLAB0001102	C2000 USASV DIA 4.0	WHITE	
4	MLEA00	LOCKER,BATTERY	MLEA0050301	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	
4	MPBJ00	PAD,MOTOR	MPBJ0068301	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MPBT00	PAD,CAMERA	MPBT0081301	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MPBU00	PAD,CONNECTOR	MPBU0078101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MTAD00	TAPE,WINDOW	MTAD0112701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MWAE00	WINDOW,CAMERA	MWAE0051201	CUTTING, PMMA MR 200, , , , ,	BLACK	
3	ACGV00	COVER ASSY,BAR	ACGV0010201		BLACK	
4	ACGK00	COVER ASSY,FRONT	ACGK0149301		BLACK	B
5	MCJK00	COVER,FRONT	MCJK0118501	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	5
6	MBFF00	BRACKET,LCD	MBFF0028401	PRESS, STS, , , , ,	WITHOUT COLOR	
5	MDAN00	DECO,SPEAKER	MDAN0019201	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	10
5	MFBC00	FILTER,SPEAKER	MFBC0054101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	6
5	MGDZ00	GUIDE	MGDZ0000301	MOLD, PC LUPOY SC-1004A, , , , ,	WITHOUT COLOR	8
5	MPBG00	PAD,LCD	MPBG0097501	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
5	MPBH00	PAD,MIKE	MPBH0050901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	7
5	MPBU00	PAD,CONNECTOR	MPBU0078001	COMPLEX, (empty), , , , ,	WITHOUT COLOR	9

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MPBU01	PAD,CONNECTOR	MPBU0077801	COMPLEX, (empty), , , ,	WITHOUT COLOR	12
5	MPBZ00	PAD	MPBZ0239001	COMPLEX, (empty), , , ,	WITHOUT COLOR	13
5	MSAZ00	SHEET	MSAZ0058901	COMPLEX, (empty), , , ,	BLACK	4
5	MTAA00	TAPE,DECO	MTAA0201501	COMPLEX, (empty), , , ,	WITHOUT COLOR	11
5	MTAB00	TAPE,PROTECTION	MTAB0384502	COMPLEX, (empty), , , ,	색상없음	
5	MTAB01	TAPE,PROTECTION	MTAB0384501	COMPLEX, (empty), , , ,	색상없음	
5	MTAD00	TAPE,WINDOW	MTAD0117901	COMPLEX, (empty), , , ,	WITHOUT COLOR	3
4	ACGM00	COVER ASSY,REAR	ACGM0147301		BLACK	E
5	ACFA00	CONTACT ASSY,SIDE BUTTON	ACFA0000302	2Button Type	WITHOUT COLOR	21
5	MBJL00	BUTTON,SIDE	MBJL0104601	COMPLEX, (empty), , , ,	BLACK	29
5	MBJL01	BUTTON,SIDE	MBJL0104701	COMPLEX, (empty), , , ,	BLACK	25
5	MBJL02	BUTTON,SIDE	MBJL0104801	COMPLEX, (empty), , , ,	BLACK	27
5	MBJL03	BUTTON,SIDE	MBJL0104901	COMPLEX, (empty), , , ,	BLACK	30
5	MCCE00	CAP,RECEPTACLE	MCCE0056101	MOLD, PC LUPOY SC-1004A, , , ,	BLACK	26
5	MCCF00	CAP,MOBILE SWITCH	MCCF0065101	COMPLEX, (empty), , , ,	BLACK	
5	MCJN00	COVER,REAR	MCJN0113101	MOLD, PC LUPOY SC-1004A, , , ,	BLACK	31
5	MDAD00	DECO,CAMERA	MDAD0051801	COMPLEX, (empty), 0.3, , ,	BLACK	33
5	MIDZ00	INSULATOR	MIDZ0239101	COMPLEX, (empty), , , ,	WITHOUT COLOR	20
5	MPBJ00	PAD,MOTOR	MPBJ0068301	COMPLEX, (empty), , , ,	WITHOUT COLOR	22
5	MPBN00	PAD,SPEAKER	MPBN0081401	COMPLEX, (empty), , , ,	WITHOUT COLOR	24
5	MPBT00	PAD,CAMERA	MPBT0081301	COMPLEX, (empty), , , ,	WITHOUT COLOR	28
5	MPBU00	PAD,CONNECTOR	MPBU0078101	COMPLEX, (empty), , , ,	WITHOUT COLOR	23
5	MTAA00	TAPE,DECO	MTAA0204101	COMPLEX, (empty), , , ,	WITHOUT COLOR	32
5	MTAB00	TAPE,PROTECTION	MTAB0365601	COMPLEX, (empty), , , ,	WITHOUT COLOR	37
5	MTAB01	TAPE,PROTECTION	MTAB0365602	COMPLEX, (empty), , , ,	WITHOUT COLOR	36
5	MTAD00	TAPE,WINDOW	MTAD0112701	COMPLEX, (empty), , , ,	WITHOUT COLOR	34

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MWAE00	WINDOW,CAMERA	MWAE0055301	CUTTING, PMMA MR 200, , , ,	BLACK	35
4	GMEY00	SCREW MACHINE,BIND	GMEY0009201	1.4 mm,3.5 mm,MSWR3(BK) ,B ,+ ,HEAD D=2.7mm	Black	38
4	MGAZ00	GASKET	MGAZ0080101	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MGAZ01	GASKET	MGAZ0080201	COMPLEX, (empty), , , ,	WITHOUT COLOR	15
4	MGAZ02	GASKET	MGAZ0081701	COMPLEX, (empty), , , ,	WITHOUT COLOR	16
4	MTAB00	TAPE,PROTECTION	MTAB0341601	COMPLEX, (empty), , , ,	WITHOUT COLOR	1
4	MTAB01	TAPE,PROTECTION	MTAB0370801	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MTAB02	TAPE,PROTECTION	MTAB0380601	COMPLEX, (empty), , , ,	WITHOUT COLOR	
4	MWAC00	WINDOW,LCD	MWAC0126301	CUTTING, PMMA MR 200, , , ,	BLACK	A, 2
6	ACKA00	CAN ASSY,SHIELD	ACKA0021801		WITHOUT COLOR	
7	MCBA00	CAN,SHIELD	MCBA0056301	PRESS, STS, , , ,	WITHOUT COLOR	
7	MLAB00	LABEL,A/S	MLAB0001102	C2000 USASV DIA 4.0	WHITE	
7	MPBN00	PAD,SPEAKER	MPBN0077201	COMPLEX, (empty), , , ,	WITHOUT COLOR	
7	MTAF00	TAPE,MOTOR	MTAF0030801	COMPLEX, (empty), , , ,	WITHOUT COLOR	
7	MTAK00	TAPE,CAMERA	MTAK0028701	COMPLEX, (empty), , , ,	WITHOUT COLOR	
6	MLAZ00	LABEL	MLAZ0038301	PID Label 4 Array	WITHOUT COLOR	

12. Exploded view & Replacement part list

12.2 Replacement Parts

<Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
1		IMT,BAR/FLIP	TIMT0009001		COLOR UNFIXED	
5	SNGF00	ANTENNA,GSM,FIXED	SNGF0051001	3.0 ,-5.0 dBd,, ,internal, BT/GPS ,; ,DUAL ,-5.0 ,50 ,3.0		18
5	SNGF01	ANTENNA,GSM,FIXED	SNGF0050801	3.0 ,-5.0 dBd,, ,internal, GSM850/GSM900/DCS/PCS/Band1/Band8/Band2/Band5 ,; ,MULTI ,-5.0 ,50 ,3.0		19
4	SAFY00	PCB ASSY,MAIN	SAFY0343201			D, 17
5	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0105001			
6	SJMY00	VIBRATOR,MOTOR	SJMY0008504	2.0 V,0.1 A,10*3.6 ,12mm linear motor ,; ,3V , , , , , , , ,		
6	SPKY00	PCB,SIDEKEY	SPKY0076601	POLYI ,.2 mm,DOUBLE ,Power(KM555) ,; , , , , , , , , ,		
6	SUSY00	SPEAKER	SUSY0028901	ASSY ,8 ohm,90 dB,1812 mm,3.0T 10mm ,; , , , , , , , , , ,[empty]		
6	SVCY00	CAMERA	SVCY0021301	CMOS ,MEGA ,CMOS ,MEGA ,3M FF Micron (1/4"),8.5x8.5x4.9,FPCB, 7mm		
5	SAFF00	PCB ASSY,MAIN,SMT	SAFF0254301			
6	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0134501			
7	BAT1	BATTERY,CELL,LITHIUM	SBCL0001701	2 V,0.5 mAh,CYLINDER ,Reflow type BB, Max T 1.67, phi 4.8, Pb-Free		
7	C1	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C10	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C100	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C101	CAP,CERAMIC,CHIP	ECCH0009506	27 pF,25V ,J ,NP0 ,TC ,0603 ,R/TP		
7	C102	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C104	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C105	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C106	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C107	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C108	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C109	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C11	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C110	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C111	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C112	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C113	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C114	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C115	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C116	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C117	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C118	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C119	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C12	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C120	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C121	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C122	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C123	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C124	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C125	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C126	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C127	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C128	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C129	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C13	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C130	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C131	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C133	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C134	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C135	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C136	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C137	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C139	CAP,CERAMIC,CHIP	ECCH0009520	15 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C14	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C140	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C141	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C111	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C112	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C113	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C114	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C115	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C116	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C117	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C118	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C119	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C12	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C120	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C121	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C122	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C123	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C124	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C125	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C126	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C127	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C128	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C129	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C13	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C130	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C131	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C133	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C134	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C135	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C136	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C137	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C139	CAP,CERAMIC,CHIP	ECCH0009520	15 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C14	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C140	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C141	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C219	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C220	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C221	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C222	CAP,TANTAL,CHIP	ECTH0001902	10 uF,10V ,M ,L_ESR ,1608 ,R/TP		
7	C223	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C224	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C225	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C226	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C227	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C228	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
7	C229	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C23	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C230	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
7	C231	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C232	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C233	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C234	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C235	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C236	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C237	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C238	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C239	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C24	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C240	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C241	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C242	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C243	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
7	C244	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C245	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C246	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C28	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C300	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C301	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C302	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
7	C304	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C305	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C306	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C307	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C310	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C315	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C316	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C317	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
7	C318	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C319	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
7	C320	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C328	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C329	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C4	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C403	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C404	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C405	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C406	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C407	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C408	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C409	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C410	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C412	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
7	C413	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C414	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C415	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
7	C419	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C420	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
7	C421	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C432	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C433	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C434	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C435	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C436	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C437	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C438	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C439	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C440	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C441	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C442	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C443	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C444	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C446	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C447	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C448	CAP,CERAMIC,CHIP	ECCH0000138	390 pF,50V,K,X7R,HD,1005,R/TP		
7	C5	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C500	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C5001	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C502	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C503	CAP,CERAMIC,CHIP	ECCH0000127	82 pF,50V,J,NP0,TC,1005,R/TP		
7	C504	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C505	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C506	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C507	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C508	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C509	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C510	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C511	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C512	CAP,CERAMIC,CHIP	ECCH0000196	0.75 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C514	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C515	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C516	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C517	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C518	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C519	CAP,CERAMIC,CHIP	ECCH00009105	82 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
7	C520	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C521	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C522	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C523	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C524	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C525	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C526	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C527	CAP,CERAMIC,CHIP	ECCH00009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C528	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C529	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C530	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C531	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C532	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C533	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C534	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C535	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C536	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C537	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , [empty] , [empty] [empty] , [empty] , [empty] , [empty]		
7	C538	CAP,CERAMIC,CHIP	ECCH00009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C539	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C540	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , [empty] , [empty] [empty] , [empty] , [empty] , [empty]		
7	C541	CAP,TANTAL,CHIP	ECTH0001902	10 uF,10V ,M ,L_ ESR ,1608 ,R/TP		
7	C542	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C543	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C544	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C545	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
7	C546	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C547	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C548	INDUCTOR,CHIP	ELCH0004730	33 nH,J ,1005 ,R/TP ,		
7	C551	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C552	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C553	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C554	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C555	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C556	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C559	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C560	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C561	CAP,CERAMIC,CHIP	ECCH0009107	2.2 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C562	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
7	C563	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C564	CAP,CERAMIC,CHIP	ECCH0000183	1.8 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C567	CAP,CHIP,MAKER	ECZH0000841	56 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C568	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C569	CAP,CERAMIC,CHIP	ECCH0000105	4 pF,50V,C,NP0,TC,1005,R/TP		
7	C571	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C572	CAP,CERAMIC,CHIP	ECCH0000180	3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C574	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C575	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C576	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C577	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C578	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		
7	C579	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C581	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C582	CAP,CERAMIC,CHIP	ECCH0000105	4 pF,50V,C,NP0,TC,1005,R/TP		
7	C584	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C585	CAP,CHIP,MAKER	ECZH0000846	8.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C586	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C587	CAP,CHIP,MAKER	ECZH0000846	8.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C588	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C591	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C592	CAP,CERAMIC,CHIP	ECCH0000195	3.9 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C593	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C594	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C595	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C596	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C599	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C600	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C601	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C602	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
7	C621	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C623	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C624	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C626	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C627	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C628	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty] [empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm		
7	C629	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C630	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C631	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C632	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C633	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C634	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C635	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C636	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C637	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C638	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C639	CAP,CERAMIC,CHIP	ECCH0000109	8 pF,50V,D,NP0,TC,1005,R/TP		
7	C640	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C641	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C642	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	CN1	CONNECTOR,I/O	ENRY0008801	5 , mm,ANGLE , , , , ,0.64MM ,ANGLE ,[empty] ,DIP ,[empty] ,		
7	CN200	CONNECTOR,ETC	ENZY0019802	3 ,2.5 mm,ETC , - , -		
7	CN302	CONNECTOR,BOARD TO BOARD	ENBY0036001	40 PIN,0.4 mm,ETC , ,H=1.0, Socket		
7	D200	DIODE,SWITCHING	EDSY0017701	SOD-123 ,40 V,1 A,R/TP , , , , , , , ,[empty] ,[empty] ,2P ,1		
7	D201	DIODE,SWITCHING	EDSY0017701	SOD-123 ,40 V,1 A,R/TP , , , , , , , ,[empty] ,[empty] ,2P ,1		
7	FB200	FILTER,BEAD,CHIP	SFBH0009201	220 ohm,1608 ,		
7	FB201	FILTER,BEAD,CHIP	SFBH0000912	1000 ohm,1005 ,		
7	FB202	FILTER,BEAD,CHIP	SFBH0009201	220 ohm,1608 ,		
7	FB300	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB301	FILTER,BEAD,CHIP	SFBH0009601	220 ohm,1005 ,DCR : 0.35 , Rated current : 500mA,PBFREE		
7	FB302	FILTER,BEAD,CHIP	SFBH0009601	220 ohm,1005 ,DCR : 0.35 , Rated current : 500mA,PBFREE		
7	FB404	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB500	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
7	FB501	FILTER,BEAD,CHIP	SFBH0008102	1800 ohm,1005 ,Bead		
7	FB502	FILTER,BEAD,CHIP	SFBH0009901	120 ohm,1005 ,		
7	FB503	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB504	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB505	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB506	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead , , ,1800ohm , ,[empty] ,R/TP		
7	FB601	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
7	FB602	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	FL1	FILTER,SAW	SFSY0037502	897.5 MHz,1.4*1.1*0.5 ,SMD ,880.48M~914.52M,IL 4.0,5pin,B-U,200 ,150-50,W-BAND VIII Tx , ,897.5 ,1.4*1.1*0.5 ,SMD ,R/TP		
7	FL2	DUPLEXER,IMT	SDMY0002001	897.5 MHz,942.5 MHz,3.1 dB,3.5 dB,52 dB,45 dB,2.5*2.0*0.5 ,SMD ,SAW, Band8, Rx unbal , ,942.5 ,927.4 to 957.6 ,897.5 ,882.4 to 912.6 ,3.5 ,3.1 ,2.5x2.0x0.5 ,DUAL ,SMD ,R/TP		
7	FL300	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
7	FL301	FILTER,EMI/POWER	SFEY0006501	SMD ,3 TERMINAL EMI FILTER		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	FL302	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
7	FL303	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
7	FL400	FILTER,EMI/POWER	SFEY0015501	SMD ,Pb-free_4ch_5p-100ohm-5p , ,Filter,LCR		
7	FL401	FILTER,EMI/POWER	SFEY0015501	SMD ,Pb-free_4ch_5p-100ohm-5p , ,Filter,LCR		
7	FL500	FILTER,SEPERATOR	SFAY0012501	, , dB, dB, dB, dB,4532 ,		
7	FL501	FILTER,SAW	SFSY0032901	1950 MHz,1.4*1.1*0.6 ,SMD ,1920M~1980M, IL 2.6, 5pin, B-U, 200_27-50, WCDMA BAND I Tx , ,1950 ,1.4*1.1*0.6 ,SMD ,R/TP		
7	FL502	DUPLEXER,IMT	SDMY0001901	1950 MHz,2140 MHz,1.8 dB,2.4 dB,52 dB,43 dB,2.5*2.0*0.55 ,SMD ,Band1, 2520size, SAW, Rx unbal , ,2140 ,2110 to 2170 ,1950 ,1920 to 1980 ,2.4 ,1.8 ,2.5x2.0x0.55 ,DUAL ,SMD ,R/TP		
7	FL505	FILTER,SAW	SFSY0029201	2140 MHz,1.35*1.05*0.6 ,SMD ,Pb-free_WCDMA_Rx_200ohm		
7	FL506	FILTER,SAW	SFSY0024301	942.5 MHz,1.4*1.1*0.6 ,SMD ,5pin, Unbal-Bal, 50//150		
7	J1	CONN,SOCKET	ENSY0022101	6 ,ETC , ,2.54 mm,H=1.5		
7	J400	CONN,JACK/PLUG,EARPHONE	ENJE0007501	,6 , , ,4P ,[empty] ,[empty] ,[empty] , ,[empty] ,13.2x6.1x4.32t		
7	L100	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L101	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L102	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L103	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L200	INDUCTOR,SMD,POWER	ELCP0006703	10 uH,M ,3.2*2.6*1.0 ,R/TP ,		
7	L201	INDUCTOR,SMD,POWER	ELCP0006703	10 uH,M ,3.2*2.6*1.0 ,R/TP ,		
7	L500	INDUCTOR,CHIP	ELCH0001402	18 nH,J ,1005 ,R/TP ,Pb Free		
7	L501	INDUCTOR,CHIP	ELCH0001556	270 nH,J ,1608 ,R/TP ,		
7	L502	INDUCTOR,CHIP	ELCH0001402	18 nH,J ,1005 ,R/TP ,Pb Free		
7	L503	INDUCTOR,CHIP	ELCH0009110	5.1 nH,J ,1005 ,R/TP ,chip coil		
7	L504	INDUCTOR,CHIP	ELCH0009110	5.1 nH,J ,1005 ,R/TP ,chip coil		
7	L505	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	L506	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L507	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
7	L508	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		
7	L509	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		
7	L510	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
7	L512	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	L513	INDUCTOR,CHIP	ELCH0004707	1.5 nH,S ,1005 ,R/TP ,		
7	L514	INDUCTOR,CHIP	ELCH0004733	4.3 nH,S ,1005 ,R/TP ,Coil		
7	L515	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
7	L516	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		
7	L517	CAP,CERAMIC,CHIP	ECCH0000185	5.6 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	L518	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		
7	L519	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
7	L520	INDUCTOR,CHIP	ELCH0001421	47 nH,J ,1005 ,R/TP ,PBFREE		
7	L521	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		
7	L522	INDUCTOR,CHIP	ELCH0001413	22 nH,J ,1005 ,R/TP ,PBFREE		
7	L523	INDUCTOR,CHIP	ELCH0003828	2.4 nH,J ,1005 ,R/TP ,MLCI		
7	L524	INDUCTOR,CHIP	ELCH0001407	5.6 nH,S ,1005 ,R/TP ,PBFREE		
7	L525	INDUCTOR,CHIP	ELCH0003826	3.3 nH,S ,1005 ,R/TP ,chip		
7	L526	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L527	INDUCTOR,CHIP	ELCH0004701	12 nH,J ,1005 ,R/TP ,		
7	L528	INDUCTOR,CHIP	ELCH0012510	15 nH,G ,1005 ,R/TP ,chip coil		
7	L529	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
7	L530	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L602	INDUCTOR,SMD,POWER	ELCP0008007	3.3 uH,N ,2.5*2.0*1.0 ,R/TP ,MLCI Power ,; ,3.3 ,30% ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,[empty] ,Inductor,Wire Wound,Chip		
7	L603	INDUCTOR,SMD,POWER	ELCP0008001	4.7 uH,M ,2.5*2.0*1.0 ,R/TP ,		
7	Q200	TR,BJT,NPN	EQBN0013701	EMT6 ,150 mW,R/TP ,DUAL TRANSISTORS		
7	R102	RES,CHIP,MAKER	ERHZ0000465	3300 ohm,1/16W ,J ,1005 ,R/TP		
7	R106	RES,CHIP,MAKER	ERHZ0000244	22 Kohm,1/16W ,F ,1005 ,R/TP		
7	R107	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R108	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R109	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R110	RES,CHIP,MAKER	ERHZ0000244	22 Kohm,1/16W ,F ,1005 ,R/TP		
7	R111	RES,CHIP,MAKER	ERHZ0000267	3300 ohm,1/16W ,F ,1005 ,R/TP		
7	R113	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R114	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R115	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R116	RES,CHIP	ERHY0000166	390 Kohm,1/16W ,F ,1005 ,R/TP		
7	R117	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R120	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R121	RES,CHIP,MAKER	ERHZ0000441	22 ohm,1/16W ,J ,1005 ,R/TP		
7	R123	RES,CHIP,MAKER	ERHZ0000204	100 Kohm,1/16W ,F ,1005 ,R/TP		
7	R125	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R127	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R129	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R130	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R135	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R137	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R14	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R15	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R20	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
7	R201	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R204	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R206	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R207	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R208	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R209	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R210	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R211	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R213	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R214	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R215	RES,CHIP,MAKER	ERHZ0000316	750 Kohm,1/16W ,F ,1005 ,R/TP		
7	R216	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R219	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R220	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R221	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R222	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R223	RES,CHIP,MAKER	ERHZ0000437	2 Kohm,1/16W ,J ,1005 ,R/TP		
7	R224	RES,CHIP,MAKER	ERHZ0000204	100 Kohm,1/16W ,F ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R225	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
7	R226	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
7	R227	RES,CHIP,MAKER	ERHZ0000454	27 Kohm,1/16W ,J ,1005 ,R/TP		
7	R230	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R231	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R24	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
7	R25	RES,CHIP,MAKER	ERHZ0000457	30 ohm,1/16W ,J ,1005 ,R/TP		
7	R302	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R304	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R306	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R309	RES,CHIP	ERHY0000290	300K ohm,1/16W,J,1005,R/TP		
7	R310	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R311	RES,CHIP,MAKER	ERHZ0000220	1500 ohm,1/16W ,F ,1005 ,R/TP		
7	R313	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R315	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R319	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R320	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R322	RES,CHIP	ERHY0000185	820 ohm,1/16W ,F ,1005 ,R/TP		
7	R332	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R337	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R338	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R339	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R4	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R401	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R402	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R403	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R404	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R406	RES,CHIP,MAKER	ERHZ0000529	1.5 Kohm,1/16W ,J ,1005 ,R/TP		
7	R407	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
7	R410	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R411	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
7	R412	RES,CHIP,MAKER	ERHZ0000445	220 Kohm,1/16W ,J ,1005 ,R/TP		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R413	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
7	R419	RES,CHIP,MAKER	ERHZ0000534	8.2 ohm,1/16W ,J ,1005 ,R/TP		
7	R420	RES,CHIP,MAKER	ERHZ0000534	8.2 ohm,1/16W ,J ,1005 ,R/TP		
7	R5	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R500	RES,CHIP	ERHY0009517	22 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R502	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R503	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
7	R504	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R505	RES,CHIP,MAKER	ERHZ0000435	20 ohm,1/16W ,J ,1005 ,R/TP		
7	R506	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R507	RES,CHIP	ERHY0000185	820 ohm,1/16W ,F ,1005 ,R/TP		
7	R508	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R509	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R512	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R513	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R518	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R520	RES,CHIP	ERHY0009501	0 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R522	RES,CHIP,MAKER	ERHZ0000268	33 Kohm,1/16W ,F ,1005 ,R/TP		
7	R602	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R617	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R621	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R622	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R623	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R7	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
7	S600	CONN,SOCKET	ENSY0020901	8 PIN,STRAIGHT , , mm,		
7	SW500	CONN,RF SWITCH	ENWY0004501	,SMD , dB,H=3.6, Straight type		
7	TH501	THERMISTOR	SETY0006301	NTC ,10000 ohm,SMD ,1005, 3350~3399k, J, R/T, PBFREE		
7	U1	IC	EUSY0337101	CSP ,12 PIN,R/TP ,Touchscreen Controller IC , ,IC,A/D Converter		
7	U100	IC	EUSY0306201	Micro pak ,8 PIN,R/TP ,D Flip Flip		
7	U101	IC	EUSY0355101	BGA ,389 PIN,R/TP ,MP-EH / HSDPA 7.2 Mbps / Display HVGA /3M CAM / H.263 / AGPS , ,IC,Digital Baseband Processor		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	U102	IC	EUSY0388101	FBGA ,149 ,ETC ,FULLY 1.8V 2G(LB/128Mx16) NAND+1G(DDR/16Mx4x16) SDRAM ,; ,IC,MCP		
7	U2	IC	EUSY0378301	DFN ,10 ,R/TP ,3-Axis Acceleration Sensor, 3*3 ,; ,IC,PMIC		
7	U200	IC	EUSY0200803	MFL ,8 ,R/TP ,Haptic Driver IC,2X2 ,; ,IC,Motor Driver		
7	U202	IC	EUSY0323901	BGA PG-WFSGA ,121 PIN,R/TP ,SMPOWER3		
7	U300	IC	EUSY0388501	DFN ,10 ,R/TP ,Cal Test Mode Single Charger IC for Micro USB ,; ,IC,Charger		
7	U301	IC	EUSY0336502	, PIN,R/TP , ,; ,IC,Charge Pump		
7	U302	IC	EUSY0371201	WLP ,20 ,R/TP ,MUIC for 5Pin Micro USB ,; ,IC,Analog Switch		
7	U304	IC	EUSY0365901	DFN1612-4B ,4 ,R/TP ,300mA 2.8V LDO ,; ,IC,LDO Voltage Regulator		
7	U4	MODULE,ETC	SMZY0023901	WiFi(b/g)+BT2.1+FM Rx, 9.0x7.8x1.3, 54pin (BCM4325D1) ,; ,WLAN		
7	U401	IC	EUSY0360201	CSP ,20 ,R/TP ,Class D(mono) + Capless HP + A/S ,; ,IC,Audio Sub System		
7	U402	IC	EUSY0250501	SC70 ,5 PIN,R/TP ,Comparator, pin compatible to EUSY0077701		
7	U500	IC	EUSY0162301	SOT-553 ,5 PIN,R/TP ,Single 2 Input OR Gate		
7	U501	PAM	SMPY0021101	dBm, %, A, dBc, dB,5x5 ,SMD ,Linear EDGE PAM. 5005's Halogen Free ver. ,; , , , , , , ,LGA ,R/TP ,		
7	U502	IC	EUSY0154001	US8 ,8 PIN,R/TP ,Dual 2-Input OR Gate, Pb Free		
7	U503	IC	EUSY0355201	BGA ,121 PIN,R/TP ,EDGE & UMTS RF Transceiver ,; ,IC,CMOS		
7	U505	PAM	SMPY0018801	28 dBm, %, A, dBc,28 dB,3x5 ,SMD ,3G Dual PAM B1+8. HELP ,; , , , , , , ,LGA ,R/TP ,14		
7	U506	IC	EUSY0365001	TSLP-16 ,16 ,R/TP ,Triple Band UMTS LNA, 2.3 x.2.3 x.0.39 ,; ,IC,RF Amplifier		
7	U604	IC	EUSY0355701	PLP1010-4 ,4 PIN,R/TP ,150mA 2.8V Single LDO ,; ,IC,Voltage Regulator		
7	VA1	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA10	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA13	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA14	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA15	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA17	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		
7	VA300	VARISTOR	SEVY0001001	14 V , ,SMD ,50pF, 1005		
7	VA301	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005, 50pF		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	VA302	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA5	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA601	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA602	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA603	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA9	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	X100	X-TAL	EXXY0018701	32.768 KHz,20 PPM,12.5 pF,70 Kohm,SMD ,3.2*1.5*0.9 ,		
7	X500	VCTCXO	EXSK0005601	26 MHz,2 PPM,10 pF,SMD ,3.2*2.5*1.0 ,		
7	X600	TCXO	EXST0001901	26 MHz,2.5 PPM,10 pF,SMD ,32*15*1.0 ,TI_WL1251 , , ,2.5PPM ,2.8V , , , ,SMD ,R/TP		
6	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0132001			
7	C16	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C2	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C21	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
7	C22	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
7	C25	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C26	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C29	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C3	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C30	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C31	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C32	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C324	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
7	C325	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C326	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C327	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C400	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C401	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C402	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C411	CAP,CERAMIC,CHIP	ECCH0000138	390 pF,50V,K,X7R,HD,1005,R/TP		
7	C418	CAP,CERAMIC,CHIP	ECCH0000138	390 pF,50V,K,X7R,HD,1005,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	CN2	CONNECTOR,BOARD TO BOARD	ENBY0034201	24 PIN,0.4 mm,ETC , ,GB042 H=1.0, Socket		
7	CN4	CONNECTOR,BOARD TO BOARD	ENBY0018601	10 PIN,.4 mm,STRAIGHT , ,H=0.9, SOCKET		
7	FB400	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
7	FB401	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
7	FB402	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ; , 1800ohm ; , [empty] ,R/TP		
7	FB403	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ; , 1800ohm ; , [empty] ,R/TP		
7	L10	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L11	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L12	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L2	INDUCTOR,CHIP	ELCH0005009	100 nH,J ,1005 ,R/TP ,		
7	L202	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L203	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L400	INDUCTOR,CHIP	ELCH0005009	100 nH,J ,1005 ,R/TP ,		
7	L401	INDUCTOR,CHIP	ELCH0005009	100 nH,J ,1005 ,R/TP ,		
7	LD1	DIODE,LED,CHIP	EDLH0014501	GREEN ,1608 ,R/TP , ; , [empty] ,2.85~3.25 , , , , [empty] , [empty] ,2P		
7	LD2	DIODE,LED,CHIP	EDLH0012504	Snow White ,1608 ,R/TP ,color concept		
7	LD3	DIODE,LED,CHIP	EDLH0007901	RED ,1608 ,R/TP ,Indicator,0.4T Red LED		
7	MIC1	MICROPHONE	SUMY0010609	UNIT ,-42 dB,3.76*2.95*1.1 ,mems smd mic ; , , , OMNI , [empty] , , [empty]		
7	R21	RES,CHIP	ERHY0013101	2.7 ohm,1/16W ,J ,1005 ,R/TP		
7	R22	RES,CHIP,MAKER	ERHZ0000495	56 ohm,1/16W ,J ,1005 ,R/TP		
7	R23	RES,CHIP,MAKER	ERHZ0000458	300 ohm,1/16W ,J ,1005 ,R/TP		
7	R330	RES,CHIP,MAKER	ERHZ0000478	3.3 ohm,1/16W ,J ,1005 ,R/TP		
7	R331	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R408	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R409	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	SPFY	PCB,MAIN	SPFY0206201	FR-4 ,0.8 mm,LX-BUMP 8 ,L1B1(KM555) ; , , , , , , , ,		
7	U303	IC	EUSY0376201	,8 ,R/TP , ; ,IC,PMIC		
7	U400	IC	EUSY0319001	WDFN-8L ,8 PIN,R/TP ,300mA/300mA 2.8V/1.8V Dual LDO		
7	VA16	VARISTOR	SEVY0005201	5.5 V , ,SMD ,1005 ,50pF		
7	VA18	VARISTOR	SEVY0005402	5.6 V , ,SMD ,1005 Siez , 50pF		

12. Exploded view & Replacement part list

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	VA19	VARISTOR	SEVY0005402	5.6 V , SMD ,1005 Siez , 50pF		
7	VA3	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA4	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA400	VARISTOR	SEVY0005202	5.5 V,+30 ,SMD ,1005, 100 pF, Pb free		
7	VA401	VARISTOR	SEVY0005202	5.5 V,+30 ,SMD ,1005, 100 pF, Pb free		
7	VA402	VARISTOR	SEVY0005202	5.5 V,+30 ,SMD ,1005, 100 pF, Pb free		
7	VA50	VARISTOR	SEVY0005202	5.5 V,+30 ,SMD ,1005, 100 pF, Pb free		
7	VA6	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA604	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA605	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA606	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA607	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
7	VA7	VARISTOR	SEVY0005201	5.5 V , SMD ,1005, 50pF		
4	SVLM00	LCD MODULE	SVLM0035201	Main ,3.0 inch ,240*400 ,43.08*75.4*1.8t ,262K ,TFT ,TM ,S6D14E0 , ,		C, 14

12. Exploded view & Replacement part list

12.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Spec	Color	Remark
3	SBPP00	BATTERY PACK,LI-ION	SBPP0027501	3.7 V,950 mAh,1 CELL,PRISMATIC ,383759 Standard I/P, WW Label ,; , , , ,PRISMATIC , , ,BLACK , ,	BLACK	
3	SGDY00	DATA CABLE	SGDY0014302	; ,[empty] ,[empty] ,1.2M , ,BLACK ,1.2m, 4, Shield case MicroUSB, ID resistor open ,N		
3	SGEY00	EAR PHONE/EAR MIKE SET	SGEY0003744	; ,RMS 20mW(0.56V,RMS) ,16Ohm+-2.4Ohm 1KHZ ,116dB+-3dB 1KHZ,3mW ,116dB 1KHZ ,96dB 100HZ ,[empty] ,BLACK ,PLUG ,GM310 , ,Earphone,Stereo		
3	SSAD00	ADAPTOR,AC-DC	SSAD0032701	100-240V ,5060 Hz,5.1 V,7 A,CE / GOST ,AC-DC ADAPTOR ,; ,150Vac~350Vac ,4.75Vdc~5.25Vdc ,700mA ,5060 , ,WALL 2P ,USB ,		